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Catalogue 2021  
July - December  
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## Analysis of Machine Elements Using SOLIDWORKS Simulation 2021



Shahin S. Nudehi and John R. Steffen

This book is written primarily for first-time SOLIDWORKS Simulation 2021 users who wish to understand finite element analysis capabilities applicable to stress analysis of mechanical elements. The focus of examples is on problems commonly found in introductory, undergraduate, Design of Machine Elements or similarly named courses.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 500pp

Pb: 978-1-630-57379-9: £58.00

\* For full contents and more information, visit: [www.routledge.com/9781630573799](http://www.routledge.com/9781630573799)

## AutoCAD 2022 for the Interior Designer

AutoCAD for Mac and PC



Dean Muccio

Focused around a hotel suite project, *AutoCAD 2022 for the Interior Designer* provides the Interior Design student with a non-intimidating, tutorial based approach to learning the AutoCAD program. It accomplishes this by taking students that have no computer design experience from simple commands to complete projects in this single-semester sized text. This well organized and progressive approach to learning AutoCAD sets this text apart from others. To support all users, this book covers AutoCAD for both Macs and PCs.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

May 2021: 8.25 x 11: 426pp

Pb: 978-1-630-57428-4: £58.00

\* For full contents and more information, visit: [www.routledge.com/9781630574284](http://www.routledge.com/9781630574284)

## AutoCAD 2022 Instructor



James A. Leach and Shawna Lockhart

The objective of this book is to provide you with extensive knowledge of AutoCAD, whether you are taking an instructor-led course or learning on your own. *AutoCAD 2022 Instructor* maintains the pedagogy and in-depth coverage that have always been the hallmark of the Leach texts. As the top-selling university textbook for more than a decade, the AutoCAD Instructor series continues to deliver broad coverage of AutoCAD in a structured, easy-to-comprehend manner.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 1300pp

Pb: 978-1-630-57420-8: £69.00

\* For full contents and more information, visit: [www.routledge.com/9781630574208](http://www.routledge.com/9781630574208)

## AutoCAD 2022 Tutorial First Level 2D Fundamentals



Randy H. Shih

The primary goal of *AutoCAD 2022 Tutorial First Level 2D Fundamentals* is to introduce the aspects of Computer Aided Design and Drafting (CADD). This text is intended to be used as a training guide for students and professionals. This text covers AutoCAD 2022 and the lessons proceed in a pedagogical fashion to guide you from constructing basic shapes to making multiview drawings. This book is intended to help readers establish a good basis for exploring and growing in the exciting field of Computer Aided Engineering.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 500pp

Pb: 978-1-630-57438-3: £61.00

\* For full contents and more information, visit: [www.routledge.com/9781630574383](http://www.routledge.com/9781630574383)

## AutoCAD 2022 Tutorial Second Level 3D Modeling



Randy H. Shih

The primary goal of *AutoCAD 2022 Tutorial Second Level 3D Modeling* is to introduce the aspects of computer based three dimensional modeling. This text is intended to be used as a training guide for both students and professionals. The basic premise of this book is that the more 3D designs you create using AutoCAD 2022 the better you learn the software. With this in mind each tutorial introduces a new set of commands and concepts, building on previous chapters. By going through this book you will establish a good basis for exploring and growing in the exciting field of Computer Aided Engineering.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

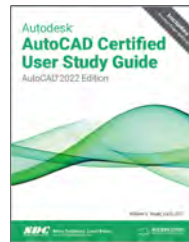
September 2021: 8.25 x 11: 350pp

Pb: 978-1-630-57448-2: £57.00

\* For full contents and more information, visit: [www.routledge.com/9781630574482](http://www.routledge.com/9781630574482)

## Autodesk AutoCAD Certified User Study Guide

AutoCAD 2022 Edition



William G. Wyatt

The *Autodesk AutoCAD Certified User Study Guide* is designed for the AutoCAD user who is already familiar with AutoCAD. It provides a series of hands on exercises and tutorials in the use of AutoCAD to help you prepare for the Autodesk AutoCAD Certified User Exam. The text covers all the exam objectives for the AutoCAD Certified User Exam. Each topic is covered in detail, and then is followed up with tutorials and quizzes to reinforce the material covered.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

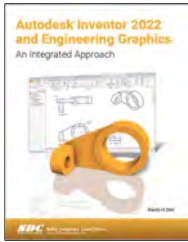
November 2021: 8.25 x 11: 400pp

Pb: 978-1-630-57454-3: £49.00

\* For full contents and more information, visit: [www.routledge.com/9781630574543](http://www.routledge.com/9781630574543)

## Autodesk Inventor 2022 and Engineering Graphics

An Integrated Approach



Randy H. Shih

*Autodesk Inventor 2022 and Engineering Graphics: An Integrated Approach* will teach you the principles of engineering graphics while instructing you on how to use the powerful 3D modeling capabilities of Autodesk Inventor 2022. Using step-by-step tutorials, this text will teach you how to create and read engineering drawings while becoming proficient at using the most common features of Autodesk Inventor. By the end of the book you will be fully prepared to take and pass the Autodesk Inventor Certified User Exam.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 700pp

Pb: 978-1-630-57435-2: **£62.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574352](http://www.routledge.com/9781630574352)

## Autodesk Inventor 2022 Essentials Plus



Daniel T. Banach, Travis Jones and Shawna Lockhart

*Autodesk Inventor 2022 Essentials Plus* provides the foundation for a hands-on course that covers basic and advanced Autodesk Inventor features used to create, edit, document, and print parts and assemblies. You learn about part and assembly modeling through real-world exercises. Autodesk Inventor 2022 Essentials Plus demonstrates critical CAD concepts, from basic sketching and modeling through advanced modeling techniques, as it equips you with the skills to master this powerful professional tool. The book walks you through every component of the software, including the user interface, toolbars, dialogue boxes,

sketch tools, drawing views, assembly modeling, and more.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 550pp

Pb: 978-1-630-57433-8: **£60.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574338](http://www.routledge.com/9781630574338)

## Autodesk Inventor Certified User Exam Study Guide

Inventor 2022 Edition



Thom Tremblay

The *Autodesk Inventor Certified User Exam Study Guide* is designed for the Inventor user who is already familiar with Inventor. It provides a series of hands on exercises and tutorials in the use of Inventor to help you prepare for the Autodesk Inventor Certified User Exam. The text covers all the exam objectives for the Inventor Certified User Exam. Each topic is covered in detail, and then is followed up with tutorials and quizzes to reinforce the material covered. Autodesk Inventor Certified User Exam Study Guide is intended for the Inventor user who has about 150 hours of instruction and real-world experience with Autodesk

Inventor software.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 100pp

Pb: 978-1-630-57445-1: **£46.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574451](http://www.routledge.com/9781630574451)

## Autodesk Maya 2022 Basics Guide



Kelly L. Murdock

Written by renowned author and 3D artist Kelly L. Murdock, *Autodesk Maya 2022 Basics Guide* is designed to give new users a solid understanding of the fundamental skills needed to create beautiful 3D models and stunning animations with Autodesk Maya. Using clear and easy to follow instructions this book will guide you through learning all the major features of Maya. The text is complemented by video instruction. Each chapter has a corresponding video tutorial that introduces you to the topics and allows you to watch and learn how functions are performed in a way that a text alone cannot do.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 600pp

Pb: 978-1-630-57450-5: **£63.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574505](http://www.routledge.com/9781630574505)

## Autodesk Revit for Architecture Certified User Exam Preparation (Revit 2022 Edition)

Focused Review for a Successful Exam



Daniel John Stine

*Autodesk Revit for Architecture Certified User Exam Preparation* is intended for the Revit user who has about 150 hours of instruction and real-world experience with Autodesk Revit software. This book will help guide you in your preparation for the Autodesk Certified User, Revit for Architecture exam. By passing this exam you are validating your Revit skills, and are well on your way to the next level of certification. Throughout the book you will find an overview of the exam process, the user interface and the four main topics: Creating and Modifying Components, Modeling and Modifying Elements, Managing Views, and Managing Documentation.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

November 2021: 8.25 x 11: 120pp

Pb: 978-1-630-57408-6: **£46.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574086](http://www.routledge.com/9781630574086)

## Commercial Design Using Autodesk Revit 2022



Daniel John Stine

*Commercial Design Using Autodesk Revit 2022* is designed for the architectural student using Revit 2022. The intent is to provide you with a well-rounded knowledge of tools and techniques for use in both school and industry. This text takes a project based approach to learning Revit's architectural tools in which you develop a three story office building. Each book also includes access to nearly 100 video tutorials designed to further help you master Autodesk Revit. General building codes and industry standard conventions are covered in a way that is applicable to the current exercise.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

June 2021: 8.25 x 11: 624pp

Pb: 978-1-630-57447-5: **£60.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574475](http://www.routledge.com/9781630574475)

## Design Integration Using Autodesk Revit 2022

Architecture, Structure and MEP



Daniel John Stine

*Design Integration Using Autodesk Revit 2022* is designed to provide you with a well-rounded knowledge of Autodesk Revit tools and techniques. All three disciplines of the Revit platform are introduced in this textbook. This approach gives you a broad overview of the Building Information Modeling (BIM) process. The topics cover the design integration of most of the building disciplines: Architectural, Interior Design, Structural, Mechanical, Plumbing and Electrical. Civil is not covered, but adding topography to your model is. Each book also includes access to nearly 100 video tutorials designed to further help you master

Autodesk Revit.

SDC Publications

**Market:** CAD CAE CAM – Computing & Information Technology

July 2021: 8.25 x 11: 898pp

Pb: 978-1-630-57451-2: **£66.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574512](http://www.routledge.com/9781630574512)

## Engineering Graphics Essentials with AutoCAD 2022 Instruction

Text and Video Instruction



Kirstie Plantenberg

This book gives students a basic understanding of how to create and read engineering drawings by presenting principles in a logical and easy to understand manner. It covers the main topics of engineering graphics, including tolerancing and fasteners, while also teaching students the fundamentals of AutoCAD 2022. This book features independent learning material containing supplemental content to further reinforce these principles. Through its many different exercises this text is designed to encourage students to interact with the instructor during lectures, and it will give students a superior understanding

of engineering graphics and AutoCAD.

SDC Publications

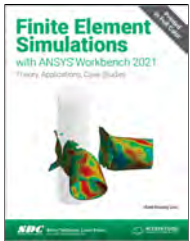
**Market:** CAD CAE CAM – Computing & Information Technology

August 2021: 8.25 x 11: 950pp

Pb: 978-1-630-57434-5: **£68.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574345](http://www.routledge.com/9781630574345)

## Finite Element Simulations with ANSYS Workbench 2021



Huei-Huang Lee

*Finite Element Simulations with ANSYS Workbench 2021* is a comprehensive and easy to understand workbook. Printed in full color, it utilizes rich graphics and step-by-step instructions to guide you through learning how to perform finite element simulations using ANSYS Workbench. Twenty seven real world case studies are used throughout the book. Many of these case studies are industrial or research projects that you build from scratch. Prebuilt project files are available for download should you run into any problems. Companion videos, that demonstrate exactly how to perform each tutorial, are also available.

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**Market:** CAD CAE CAM – Computing & Information Technology

July 2021: 8.25 x 11: 600pp

Pb: 978-1-630-57456-7: **£65.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574567](http://www.routledge.com/9781630574567)

3rd Edition

## Getting Started with Onshape

Elise Moss

Onshape is an exciting, completely cloud based CAD tool. *Getting Started with Onshape* is a quick paced guide geared towards users who have no experience with 2D or 3D modeling. This edition has been fully updated to match all the recent changes to Onshape. This edition also features new content covering sheet metal features (including flat pattern views), hole tables, parts lists, and using standard content.

SDC Publications

**Market:** CAD CAE CAM – Computing & Information Technology

July 2021: 8.25 x 11: 450pp

Pb: 978-1-630-57455-0: **£54.00**

Prev. Ed Pb: 978-1-630-57054-5

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## Interior Design Using Autodesk Revit 2022

Introduction to Building Information Modeling for Interior Designers



Daniel John Stine and Aaron R. Hansen

The intent of this book is to provide the interior design student a well-rounded knowledge of Autodesk Revit tools and techniques. These skills can then be applied to enhance professional development in both academia and industry. Each book also includes access to nearly 100 video tutorials designed to further help you master Autodesk Revit.

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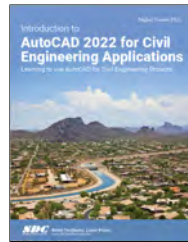
July 2021: 8.25 x 11: 838pp

Pb: 978-1-630-57426-0: **£63.00**

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## Introduction to AutoCAD 2022 for Civil Engineering Applications

Learning to use AutoCAD for Civil Engineering Projects



Nighat Yasmin

This book provides you with a clear presentation of the theory of engineering graphics and the use of AutoCAD 2022 as they pertain to civil engineering applications. This combination of theory and its practical application will give you the knowledge and skills necessary to create designs that are accurate and easily understood by others. The contents of each chapter are organized into well-defined sections that contain step-by-step instructions and illustrations to help you learn to use the various AutoCAD commands. More importantly, you will also learn how and why you would use these tools in real world projects.

SDC Publications

**Market:** CAD CAE CAM – Computing & Information Technology

October 2021: 8.25 x 11: 800pp

Pb: 978-1-630-57443-7: **£63.00**

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## Learning Autodesk Inventor 2022

Modeling, Assembly and Analysis



Randy H. Shih

This book will teach you everything you need to know to start using Autodesk Inventor 2022 with easy to understand, step-by-step tutorials. This book features a simple robot design used as a project throughout the book. You will learn to model parts, create assemblies, run simulations and even create animations of your robot design. An unassembled version of the same robot used throughout the book can be bundled with the book. No previous experience with Computer Aided Design(CAD) is needed since this book starts at an introductory level.

SDC Publications

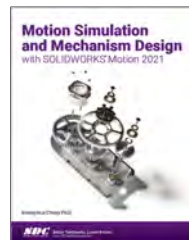
Market: CAD CAE CAM - Computing & Information Technology

August 2021: 8.25 x 11: 500pp

Pb: 978-1-630-57441-3: £60.00

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## Motion Simulation and Mechanism Design with SOLIDWORKS Motion 2021



Kuang-Hua Chang

This book is written to help you become familiar with SOLIDWORKS Motion, an add-on module of the SOLIDWORKS software family. This book covers the basic concepts and frequently used commands required to advance readers from a novice to intermediate level in using SOLIDWORKS Motion.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 200pp

Pb: 978-1-630-57388-1: £54.00

\* For full contents and more information, visit: [www.routledge.com/9781630573881](http://www.routledge.com/9781630573881)

## Machining Simulation Using SOLIDWORKS CAM 2021



Kuang-Hua Chang

This book will teach you all the important concepts and steps used to conduct machining simulations using SOLIDWORKS CAM. This book is intentionally kept simple. It's written to help you become familiar with the practical applications of conducting machining simulations in SOLIDWORKS CAM. This book provides you with the basic concepts and steps needed to use the software, as well as a discussion of the G-codes generated. After completing this book, you should have a clear understanding of how to use SOLIDWORKS CAM for machining simulations and should be able to apply this knowledge to carry

out machining assignments on your own product designs.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

August 2021: 8.25 x 11: 300pp

Pb: 978-1-630-57414-7: £55.00

\* For full contents and more information, visit: [www.routledge.com/9781630574147](http://www.routledge.com/9781630574147)

## Parametric Modeling with Autodesk Fusion 360

Spring 2021 Edition



Randy H. Shih

*Parametric Modeling with Autodesk Fusion 360* contains a series of thirteen tutorial style lessons designed to introduce Autodesk Fusion 360, solid modeling and parametric modeling techniques and concepts. This book introduces Autodesk Fusion 360 on a step-by-step basis, starting with constructing basic shapes, all the way through to the creation of assembly drawings and 3D printing your own designs. This book takes a hands on, exercise intensive approach to all the important parametric modeling techniques and concepts. Each lesson introduces a new set of commands and concepts, building on previous lessons. Spring

2021 Edition.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 400pp

Pb: 978-1-630-57437-6: £60.00

\* For full contents and more information, visit: [www.routledge.com/9781630574376](http://www.routledge.com/9781630574376)

## Microsoft Word Introduction and Certification Study Guide

Microsoft 365 Apps and Office 2019



Daniel John Stine

Combining two books in one, *Microsoft Word Introduction and Certification Study Guide* serves as a training guide for Microsoft Word and a study guide for the Word Certification Exam. Students, professionals, beginners and more experienced users alike can all benefit from this manual. Learn how to create well-formatted, high-quality documents by following along with chapters that focus on six exam topics. These topics closely follow what is needed to ace the exam but also provide comprehensive information for everyday Word users.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

June 2021: 8.25 x 11: 216pp

Pb: 978-1-630-57371-3: £54.00

\* For full contents and more information, visit: [www.routledge.com/9781630573713](http://www.routledge.com/9781630573713)

## Parametric Modeling with Autodesk Inventor 2022



Randy H. Shih and Luke Jumper

*Parametric Modeling with Autodesk Inventor 2022* contains a series of seventeen tutorial style lessons designed to introduce Autodesk Inventor, solid modeling, and parametric modeling. It uses a hands-on, exercise-intensive approach to all the important parametric modeling techniques and concepts. The lessons guide the user from constructing basic shapes to building intelligent mechanical designs, to creating multi-view drawings and assembly models. Included with every new copy of this book is access to extensive video training.

SDC Publications

Market: CAD CAE CAM - Computing & Information Technology

August 2021: 8.25 x 11: 600pp

Pb: 978-1-630-57422-2: £64.00

\* For full contents and more information, visit: [www.routledge.com/9781630574222](http://www.routledge.com/9781630574222)

## Parametric Modeling with SOLIDWORKS 2021



Randy H. Shih and Paul J. Schilling

This book contains a series of seventeen tutorial style lessons designed to introduce SOLIDWORKS 2021, solid modeling and parametric modeling techniques and concepts. This book introduces SOLIDWORKS 2021 on a step-by-step basis, starting with constructing basic shapes, all the way through to the creation of assembly drawings and motion analysis.

SDC Publications

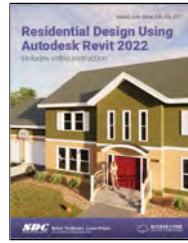
**Market:** CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 600pp

Pb: 978-1-630-57404-8: £62.00

\* For full contents and more information, visit: [www.routledge.com/9781630574048](http://www.routledge.com/9781630574048)

## Residential Design Using Autodesk Revit 2022



Daniel John Stine

*Residential Design Using Autodesk Revit 2022* is designed for users completely new to Autodesk Revit. This text takes a project based approach to learning Autodesk Revit's architectural tools in which you develop a single family residence all the way to photorealistic renderings like the one on the cover. Each book also includes access to extensive video training designed to further help you master Autodesk Revit.

SDC Publications

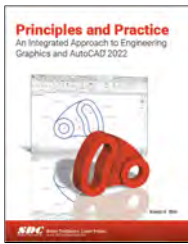
**Market:** CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 690pp

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\* For full contents and more information, visit: [www.routledge.com/9781630574390](http://www.routledge.com/9781630574390)

## Principles and Practice An Integrated Approach to Engineering Graphics and AutoCAD 2022



Randy H. Shih

*Principles and Practices An Integrated Approach to Engineering Graphics and AutoCAD 2022* combines an introduction to AutoCAD 2022 with a comprehensive coverage of engineering graphics principles. By adopting this textbook, you will no longer need to adopt separate CAD and engineering graphics books for your course. Not only will this unified approach give your course a smoother flow, your students will also save money on their textbooks. What's more, the tutorial exercises in this text have been expanded to cover the performance tasks found on the AutoCAD 2022 Certified User Examination.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

July 2021: 8.25 x 11: 600pp

Pb: 978-1-630-57429-1: £62.00

\* For full contents and more information, visit: [www.routledge.com/9781630574291](http://www.routledge.com/9781630574291)

## SOLIDWORKS 2021 and Engineering Graphics

An Integrated Approach



Randy H. Shih

This book combines an introduction to SOLIDWORKS 2021 with a comprehensive coverage of engineering graphics principles. Not only will this unified approach give your course a smoother flow, your students will also save money on their textbooks. What's more, the exercises in this book cover the performance tasks that are included on the Certified SOLIDWORKS Associate (CSWA) Examination. Reference guides located at the front of the book and in each chapter show where these performance tasks are covered.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

May 2021: 8.25 x 11: 750pp

Pb: 978-1-630-57423-9: £62.00

\* For full contents and more information, visit: [www.routledge.com/9781630574239](http://www.routledge.com/9781630574239)

## Residential Design Using AutoCAD 2022



Daniel John Stine

*Residential Design Using AutoCAD 2022* is an introductory level tutorial which uses residential design exercises as the means to teach you AutoCAD 2022. Each book comes with access to extensive video instruction in which the author explains the most common tools and techniques used when designing residential buildings using AutoCAD 2022. After completing this book you will have a well-rounded knowledge of Computer Aided Drafting that can be used in the industry and the satisfaction of having completed a set of residential drawings.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

June 2021: 8.25 x 11: 430pp

Pb: 978-1-630-57449-9: £58.00

\* For full contents and more information, visit: [www.routledge.com/9781630574499](http://www.routledge.com/9781630574499)

## Technical Drawing 101 with AutoCAD 2022

A Multidisciplinary Guide to Drafting Theory and Practice with Video Instruction



Ashleigh Fuller, Antonio Ramirez and Douglas Smith

*Technical Drawing 101* covers topics ranging from the most basic, such as making freehand, multiview sketches of machine parts, to the advanced—creating an AutoCAD dimension style containing the style settings defined by the ASME Y14.5-2009 Dimensioning and Tolerancing standard. But unlike the massive technical drawing reference texts on the market, *Technical Drawing 101* aims to present just the right mix of information and projects that can be reasonably covered by faculty, and assimilated by students, in one semester. Both mechanical and architectural projects are introduced to capture the interest of

more students and to offer a broader appeal.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

August 2021: 8.25 x 11: 550pp

Pb: 978-1-630-57430-7: £62.00

\* For full contents and more information, visit: [www.routledge.com/9781630574307](http://www.routledge.com/9781630574307)



## Tools for Design Using AutoCAD 2022 and Autodesk Inventor 2022

Hand Sketching, 2D Drawing and 3D Modeling



Randy H. Shih

*Tools for Design* is intended to provide you with an overview of computer aided design using two popular CAD software packages from Autodesk: AutoCAD and Autodesk Inventor. This book explores the strengths of each package and shows how they can be used in design, both separately and in combination with each other. This book is designed for high school and college age students wanting to learn the fundamentals of computer aided design with AutoCAD and Inventor and how the two can be used together. No prior CAD experience is required.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

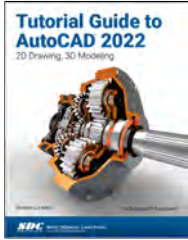
August 2021: 8.25 x 11: 650pp

Pb: 978-1-630-57444-4: **£63.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574444](http://www.routledge.com/9781630574444)

## Tutorial Guide to AutoCAD 2022

2D Drawing, 3D Modeling



Shawna Lockhart

*Tutorial Guide to AutoCAD 2022* provides a step-by-step introduction to AutoCAD with commands presented in the context of each tutorial. In fifteen clear and comprehensive chapters, author Shawna Lockhart guides you through all the important commands and techniques in AutoCAD 2022, from 2D drawing to solid modeling and finally finishing with rendering. In each lesson, the author provides step-by-step instructions with frequent illustrations showing exactly what appears on the AutoCAD screen. Later, individual steps are no longer provided, and you are asked to apply what you've learned

by completing sequences on your own.

SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

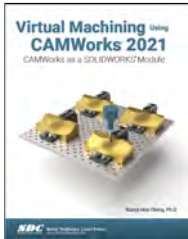
July 2021: 8.25 x 11: 700pp

Pb: 978-1-630-57440-6: **£62.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574406](http://www.routledge.com/9781630574406)

## Virtual Machining Using CAMWorks 2021

CAMWorks as a SOLIDWORKS Module



Kuang-Hua Chang

This book is written to help you learn the core concepts and steps used to conduct virtual machining using CAMWorks. The book covers the basic concepts and frequently used commands and options you'll need to know to advance from a novice to an intermediate level CAMWorks user. Basic concepts and commands introduced include extracting machinable features (such as 2.5 axis features), selecting machine and tools, defining machining parameters (such as feed rate), generating and simulating toolpaths, and post processing CL data to output G-codes for support of CNC machining. The concepts and

commands are introduced in a tutorial style presentation using simple but realistic examples.

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SDC Publications

**Market:** CAD CAE CAM - Computing & Information Technology

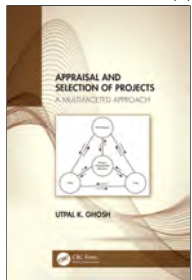
August 2021: 8.25 x 11: 250pp

Pb: 978-1-630-57406-2: **£54.00**

\* For full contents and more information, visit: [www.routledge.com/9781630574062](http://www.routledge.com/9781630574062)

## Appraisal and Selection of Projects

A Multi-faceted Approach



**Utpal K. Ghosh**, Consulting Chartered Engineer, Kolkata, India

Project appraisal is the process of assessing in a systematic way, the viability of a project at its initial "idea" stage when information is minimal, but the decision, whether to go ahead with the project, is important and this book deals with the principles and practice of appraisal process. It covers all the financial and economic aspects, including market and technical analysis, environmental appraisal, life cycle costing, and SWOT analysis. The book starts with basis of the subject followed by analysis of the project proposals from different perspectives for ascertaining their viabilities including a brief discussion on uncertainty and risk analysis, important tools and techniques.

CRC Press

**Market:** Civil Engineering  
September 2021: 6.14 x 9.21: 112pp  
Hb: 978-1-032-04228-2: **£68.99**  
eBook: 978-1-003-19103-2

\* For full contents and more information, visit: [www.routledge.com/9781032042282](http://www.routledge.com/9781032042282)

2nd Edition

## Automotive Technician Training: Theory



**Tom Denton**, IML eLearning Development Manager, UK and **Hayley Pells**, Avia Sports Cars Ltd, UK

*Automotive Technician Training* is the definitive textbook for automotive engineering. Produced alongside the ATT online learning resources, this textbook covers all the theory and technology sections that students need to learn in order to pass levels 1, 2 and 3 automotive courses. It is recommended by the Institute of the Motor Industry and is ideal for exams run by other awarding bodies. The revised edition overhauls the coverage of workshop skills and advanced diagnostic techniques. It also includes a new chapter about electric and hybrid vehicles and advanced driver-assistance systems, along with new online learning activities.

Routledge

**Market:** Automotive Engineering  
September 2021: 8.62 x 10.8: 592pp  
Hb: 978-1-032-00233-0: **£94.99**  
Pb: 978-1-032-00220-0: **£36.99**  
eBook: 978-1-003-17323-6

\* For full contents and more information, visit: [www.routledge.com/9781032002330](http://www.routledge.com/9781032002330)



## Bridge Traffic Loading

From Research to Practice

Edited by **Eugene O'Brien**, University College Dublin, Ireland, **Andrzej Nowak**, Auburn University, USA and **Colin Caprani**, Monash University, Australia

New and reliable truck weight data allows accurate calculations of vertical loading of traffic on bridges, both for specific bridges and road networks. Codes specifying notional load models are often crude and inconsistent for different load effects.

This book delivers not just the state-of-the-art of vertical loading, but also provides recommendations of best-practice for short-span, single and multi-lane bridge loading, dynamic allowance and long-span bridges. It also reviews statistical distributions, free-flowing versus congested traffic, and future growth. Specialist consultants and bridge owners should find this invaluable, as will regulators.

CRC Press

**Market:** Structural Engineering  
October 2021: 6.14 x 9.21: 264pp  
Hb: 978-0-367-33246-4: **£100.00**  
eBook: 978-0-429-31884-9

\* For full contents and more information, visit: [www.routledge.com/9780367332464](http://www.routledge.com/9780367332464)

## City and Transportation Planning

An Integrated Approach



**Akinori Morimoto**, Waseda University, Japan

Many urban and transportation problems, such as traffic congestion, traffic accidents and environmental burdens, result from poor integration of land use and transportation. This graduate-level textbook outlines strategies for sustainably integrating land use and transportation planning, addressing the impact on land use of advanced transport like light rail transit and autonomous cars, and the emerging focus on cyber space and the role of ICT and big data in city planning.

Routledge

**Market:** Transport and Urban Planning  
August 2021: 6.14 x 9.21: 222pp  
Hb: 978-0-367-63602-9: **£100.00**  
Pb: 978-0-367-63601-2: **£44.99**  
eBook: 978-1-003-11991-3

\* For full contents and more information, visit: [www.routledge.com/9780367636029](http://www.routledge.com/9780367636029)

## Computational Multiphase Geomechanics

**Fusao Oka**, LIQCA liquefaction Geo Research Institute, Japan and **Sayuri Kimoto**, Kyoto University, Japan

Numerical methods underpin computational geotechnics, and especially multi-phase geomaterials. This book covers basic concepts of the air-water-soil mixture, cyclic constitutive models, anisotropic models, noncoaxial models, gradient models, compaction bands (a form of volumetric strain localization and strain localization under dynamic conditions), and instability of unsaturated soils. It also includes applications of computational modeling to large-scale excavation of ground, liquefaction analysis of levees during earthquakes, methane hydrate development, and the shielding of contamination using bentonite. The erosion of embankments due to the seepage flow is also presented.

CRC Press

**Market:** Civil Engineering  
November 2021: 6.14 x 9.21: 376pp  
Hb: 978-1-032-05955-6: **£100.00**  
eBook: 978-1-003-20003-1

\* For full contents and more information, visit: [www.routledge.com/9781032059556](http://www.routledge.com/9781032059556)

## Computer-Aided Highway Engineering



**Sandipan Goswami**, TechSOFT Engineering Services, New Delhi, INDIA and **Pradip Sarkar**, Asian Institute of Transport Development, New Delhi, INDIA

Computer Aided Highway Engineering is aimed at developing professional knowledge in the field of highway engineering with adequate skills in planning, designing and implementation of the highway project with an exposure of hands on training of computer software in designing the road infrastructures, in all countries worldwide. It discusses Digital Terrain Model (DTM) using satellite data including highway geometric, pavement and tunnel design, supported by relevant tutorials. Quantity estimation, cost estimation and production of various types of construction drawings are described in detail with theory and

tutorials backed by real project data.

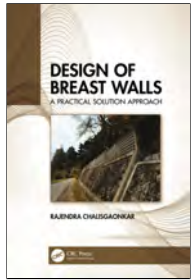
CRC Press

**Market:** Transportation Engineering  
August 2021: 6.14 x 9.21: 518pp  
Hb: 978-0-367-49338-7: **£130.00**  
eBook: 978-1-003-04583-0

\* For full contents and more information, visit: [www.routledge.com/9780367493387](http://www.routledge.com/9780367493387)

## Design of Breast Walls

A Practical Solution Approach



**Rajendra Chalisgaonkar**, Former Engineer-in-Chief, Irrigation Department, Govt. of Uttarakhand, India

The design of breast walls is an important parameter in various earth retaining purposes and many problems are encountered in the field as a result of their improper design and proper explanation of parameters which influence the techno-economic designs is required. The book gives an insight on the basics of theory of earth pressures and design of retaining walls explaining basics of earth pressure theories, parameters influencing earth pressures, gravity vis-à-vis breast walls, tables and charts for designing stone masonry and concrete breast walls, across eight chapters. Details of analysis are tabulated to aid professional engineer or designer in their practical work.

CRC Press

**Market:** Geotechnical Engineering

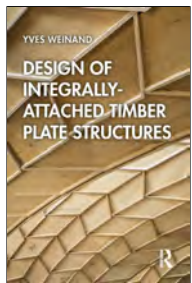
September 2021: 6.14 x 9.21: 316pp

Hb: 978-0-367-75471-6: **£100.00**

eBook: 978-1-003-16299-5

\* For full contents and more information, visit: [www.routledge.com/9780367754716](http://www.routledge.com/9780367754716)

## Design of Integrally-Attached Timber Plate Structures



**Yves Weinand**, École Polytechnique Fédérale de Lausanne, Switzerland

This outlines a new design methodology for digitally fabricated spatial timber plate structures, presented with examples from recent construction projects. It proposes an innovative and sustainable design methodology, algorithmic geometry processing, structural optimization, and digital fabrication, and technology transfer and construction are formulated and widely discussed. The methodology relies on integral mechanical attachment whereby the connection between timber plates is established solely through geometric manipulation, without additional connectors such as nails, screws, dowels, adhesives, or welding.

Routledge

**Market:** Digital Architecture and Structural Engineering

September 2021: 6.14 x 9.21: 224pp

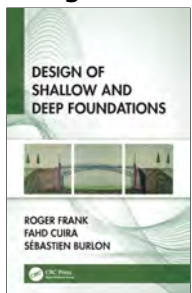
Hb: 978-0-367-68939-1: **£120.00**

Pb: 978-0-367-68938-4: **£44.99**

eBook: 978-1-003-13971-3

\* For full contents and more information, visit: [www.routledge.com/9780367689391](http://www.routledge.com/9780367689391)

## Design of Shallow and Deep Foundations



**Roger Frank**, École nationale des ponts et chaussées, France, **Fahd Cuirá**, Terrasol and École nationale des ponts et chaussées, France and **Sébastien Burlon**, Terrasol and École nationale des ponts et chaussées, France

This practical guide to foundations design introduces the concept of limit state calculations, before focusing on shallow and deep foundations. It also presents various elements of ground-structure interaction that are common to all types of foundations, such as allowable displacements of structures, and ground-structure couplings.

It is particularly for practising engineers in design offices and contractors, as well as students. Though its focus is generally on French practice, it is more widely applicable to design based on

or generally in line with Eurocode7 and with references to BS ENs.

CRC Press

**Market:** Civil Engineering

August 2021: 6.14 x 9.21: 232pp

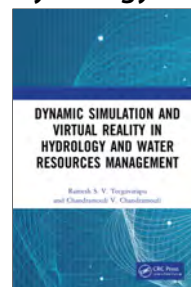
Hb: 978-1-032-01687-0: **£79.99**

Pb: 978-1-032-01688-7: **£42.99**

eBook: 978-1-003-17959-7

\* For full contents and more information, visit: [www.routledge.com/9781032016870](http://www.routledge.com/9781032016870)

## Dynamic Simulation and Virtual Reality in Hydrology and Water Resources Management



**Ramesh S.V. Teegavarapu**, Florida Atlantic University, Boca Raton, U.S.A. and **Chandramouli V. Chandramouli**, Purdue University Northwest, USA

This book focuses on the understanding, use, and application of system dynamics simulation and virtual reality approaches for modelling the spatial and temporal behavior of natural and managed hydro-environmental systems. It discusses concepts of systems thinking, system dynamics approach, and it furthers understanding of the dynamic behavior of natural and engineering systems using feedbacks and dynamic simulation. Numerous examples of models built using different system dynamics simulation modeling environments are provided. It also introduces concepts related to computer animation and

virtual reality-based immersive modeling.

CRC Press

**Market:** Water resources and hydrology

July 2021: 6.14 x 9.21: 198pp

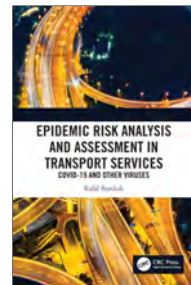
Hb: 978-0-367-36378-9: **£94.99**

eBook: 978-0-429-34555-5

\* For full contents and more information, visit: [www.routledge.com/9780367363789](http://www.routledge.com/9780367363789)

## Epidemic Risk Analysis and Assessment in Transport Services

COVID-19 and Other Viruses



**Rafal Burdzik**, Silesian University of Technology, Poland

This book presents a complete methodology for assessing the hazards, and probability and risks of viral transmission on public and freight transport services, with the example of the SARS-CoV-2 coronavirus pandemic. It gives a simple methodology for estimating the costs of prevention, and considers changes in social behaviour in relation to epidemic threats. Tools include a matrix of hazard assessment in transportation, with a methodology for estimating the probability of virus transmission through both droplets and surface contact. These allow estimation of the effects of infections and consequent epidemic risk, and provide methods for forecasting.

CRC Press

**Market:** Public health and epidemiology

September 2021: 6.14 x 9.21: 168pp

Hb: 978-1-032-06961-6: **£140.00**

eBook: 978-1-003-20473-2

\* For full contents and more information, visit: [www.routledge.com/9781032069616](http://www.routledge.com/9781032069616)

## Flapping Wing Vehicles

Numerical and Experimental Approach

**Lung-Jieh Yang**, Tamkang University, Tamsui, Taiwan and **Balasubramanian Esakki**, Vel Tech Rangarajan Dr Sagunthala R & D Institute of Science and Technology, India

Flapping wing micro aerial vehicles (FWMAVs) has unique flight characteristics and the successful flight of such a vehicle depends upon efficient design of flapping mechanism while keeping the minimal weight of the structure. This book discusses design and kinematic analysis of various flapping wing mechanisms, measurement of flap angle/flapping frequency, computational fluid dynamic analysis of motion characteristics including manufacturing techniques. It also includes wind tunnel experiments, high speed photographic analysis of aerodynamic performance, soap film visualization of 3D downwash, studies on the effect of wing rotation and figure-8 motion characteristics and so forth.

CRC Press

**Market:** Aerospace Engineering

September 2021: 6.14 x 9.21: 456pp

Hb: 978-0-367-23257-3: **£150.00**

eBook: 978-0-429-28043-6

\* For full contents and more information, visit: [www.routledge.com/9780367232573](http://www.routledge.com/9780367232573)

2nd Edition

**Forensic Engineering**

Damage Assessments for Residential and Commercial Structures

Edited by **Stephen E. Petty**, EES Group, Inc., Dublin, Ohio, USA

Serving as a comprehensive resource that builds a bridge between engineering disciplines and the building sciences and trades, *Forensic Engineering: Damage Assessments for Residential and Commercial Structures, Second Edition* provides an extensive look into the world of forensic engineering. Focusing on investigations associated with insurance industry claims, the book describes methodologies for performing insurance-related investigations including the causation and origin of damage to residential and commercial structures and/or unhealthy interior environments and adverse effects on the occupants of these structures.

CRC Press

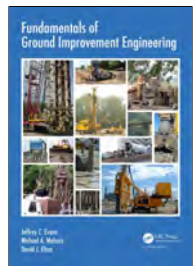
**Market:** Civil Engineering

September 2021: 764pp

Hb: 978-0-367-75813-4: **£140.00**

eBook: 978-1-003-18930-5

Prev. Ed Hb: 978-1-439-89972-4

\* For full contents and more information, visit: [www.routledge.com/9780367758134](http://www.routledge.com/9780367758134)**Fundamentals of Ground Improvement Engineering**

Jeffrey Evans, Bucknell University, USA, Daniel Ruffing and David Elton

*Fundamentals of Ground Improvement Engineering* addresses the most effective and latest cutting-edge techniques for ground improvement. Key ground improvement methods are introduced that provide readers with a thorough understanding of the theory, design principles, and construction approaches that underpin each method. Major topics are compaction, permeation grouting, vibratory methods, soil mixing, stabilization and solidification, cutoff walls, dewatering, consolidation, geosynthetics, jet grouting, ground freezing, compaction grouting, and earth retention.

CRC Press

**Market:** Geotechnical Engineering

September 2021: 7 x 10: 600pp

Hb: 978-0-367-41960-8: **£125.00**Pb: 978-0-415-69515-2: **£44.99**

eBook: 978-0-367-81699-5

\* For full contents and more information, visit: [www.routledge.com/9780415695152](http://www.routledge.com/9780415695152)**Green Engineering and Technology**

Innovations, Design, and Architectural Implementation



Edited by **Om Prakash Jena, Alok Ranjan Tripathy** and **Zdzislaw Polkowski**, Jan Wyzykowski University, Poland  
*Series: Green Engineering and Technology*

Green engineering technologies help to create sustainable, eco-friendly designs and solutions with the aid of updated tools, methods, designs, and innovations. These technologies play a significant role in optimizing sustainability in various areas of energy, agriculture, waste management, and bioremediation; and includes green computing and artificial intelligence (AI) applications. This book examines the most recent advancements in green technology, across multiple industries, and outlines the opportunities of emerging and future innovations, as well as practical real-world implementation.

CRC Press

**Market:** Civil Engineering

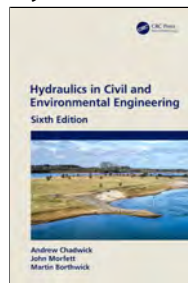
June 2021: 6.14 x 9.21: 393pp

Hb: 978-0-367-75805-9: **£89.99**

eBook: 978-1-003-17627-5

\* For full contents and more information, visit: [www.routledge.com/9780367758059](http://www.routledge.com/9780367758059)

6th Edition

**Hydraulics in Civil and Environmental Engineering**

Andrew Chadwick, former university lecturer, UK, John Morfett and Martin Borthwick, Environment Agency, UK

This classic textbook brings together the basic principles of civil engineering hydraulics with a wide-range of practical, real-world applications.

This new edition gives more on hydrostatics, along with new problems for students to practice with. Uncertainty estimation and its application to design is presented in the hydrology, river and coastal engineering chapters. Recommendations for climate change predictions, impacts and adaptation measures have been updated, as has the chapter on computational hydraulics for the application of computational simulation techniques.

Spreadsheets and a solutions manual for lecturers are given on

[www.crcpress.com](http://www.crcpress.com)

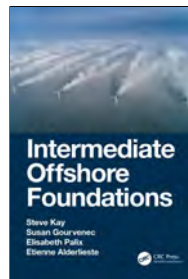
CRC Press

**Market:** Civil and Environmental Engineering

June 2021: 6.85 x 9.69: 652pp

Hb: 978-0-367-46090-7: **£140.00**Pb: 978-0-367-46089-1: **£56.99**

eBook: 978-1-003-02683-9

\* For full contents and more information, visit: [www.routledge.com/9780367460907](http://www.routledge.com/9780367460907)**Intermediate Offshore Foundations**

Steve Kay, Consultant, Netherlands, Susan Gourvenec, University of Southampton, UK, Elisabeth Palix, EDF Energies Nouvelles, Paris and Etienne Alderlieste, Deltares, Netherlands

Intermediate foundations are used for anchors, as foundations for tension leg platforms and steel jackets, and to support seafloor equipment and offshore wind turbines. When installed by suction, they are an economical alternative to piling, and also may be completely removed. They are usually circular in plan and are essentially rigid when laterally loaded, and can be embedded into the seafloor with embedment ratios L/D of between 0.5 and 10. This is the first ever book dedicated to the geotechnical design of intermediate foundations book, and it

will appeal to professional engineers specialising in the offshore industry.

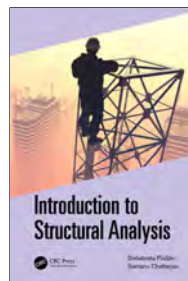
CRC Press

**Market:** Civil and Offshore Engineering

June 2021: 6.14 x 9.21: 334pp

Hb: 978-1-138-35353-4: **£100.00**

eBook: 978-0-429-42384-0

\* For full contents and more information, visit: [www.routledge.com/9781138353534](http://www.routledge.com/9781138353534)**Introduction to Structural Analysis**

Debabrata Podder, Civil Engineering, National Institute of Technology Meghalaya, India and Santanu Chatterjee, Structural Lead, RGM International (India) Pvt. Ltd., India

This book cover principles of structural analysis without any requirement of prior knowledge of structures or equations. Starting from the basic principles of equilibrium of forces and moments, all other subsequent theories of structural analysis have been discussed logically. Divided into two major parts, this book discusses basics of mechanics and principles of degrees of freedom upon which the entire paradigm rests followed by analysis of determinate and indeterminate structures. Energy method of structural analysis is also included. Worked out examples are provided in each chapter to explain the concept

and to solve real life structural analysis along with solutions manual.

CRC Press

**Market:** Structural Engineering

October 2021: 6.14 x 9.21: 456pp

Hb: 978-0-367-53272-7: **£95.00**

eBook: 978-1-003-08122-7

\* For full contents and more information, visit: [www.routledge.com/9780367532727](http://www.routledge.com/9780367532727)

## Leadership, Ethics, and Project Execution

An Evidence-Based Project Success Model



**F.H. Griffis**, Columbia University, New York, **Frederick B. Plummer** and **Francis X. DarConte**, New York University, New York

Leadership, Ethics, and Project Execution provides a masterclass in the project and people management skills that set apart the most accomplished design and construction professionals. Interactive exercises allow readers to take the role of junior project managers and other emerging professionals and reason through the ethical dilemmas surrounding building projects from the initial bid to completion. Chapters on stakeholder alignment, productivity, and project success ensure that aspiring leaders' business decisions are as economically sound as they are ethically correct.

Routledge

**Market:** Construction and Architectural Engineering

November 2021: 6.14 x 9.21: 368pp

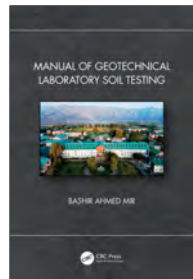
Hb: 978-0-367-65530-3: **£145.00**

Pb: 978-0-367-65425-2: **£56.99**

eBook: 978-1-003-12994-3

\* For full contents and more information, visit: [www.routledge.com/9780367655303](http://www.routledge.com/9780367655303)

## Manual of Geotechnical Laboratory Soil Testing



**Bashir Ahmed Mir**, National Institute of technology Srinagar, J&K, India.

*Manual of Geotechnical Laboratory Soil Testing* covers physical, index & engineering properties of soils including compaction characteristics (optimum moisture content), permeability (coefficient of hydraulic conductivity), compressibility characteristics and shear strength (cohesion intercept and angle of internal friction). This manual is aimed at undergraduates, senior undergraduates and researchers in Geotechnical and Civil Engineering.

CRC Press

**Market:** Geotechnical Engineering

October 2021: 6.14 x 9.21: 392pp

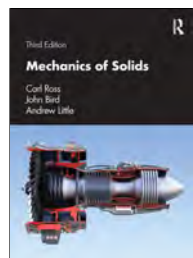
Hb: 978-1-032-06009-5: **£100.00**

eBook: 978-1-003-20026-0

\* For full contents and more information, visit: [www.routledge.com/9781032060095](http://www.routledge.com/9781032060095)

3rd Edition

## Mechanics of Solids



**Carl Ross**, Professor of Structural Dynamics, University of Portsmouth, UK, **John Bird**, formerly Senior Lecturer, HMS Sultan, UK and **Andrew Little**, Lecturer at the University of Portsmouth, UK

This introduction to the behaviour of solid materials under loading, focuses on statics and stress analysis. As the primary recommended mechanics of solids text of the Council of Engineering Institutions for undergraduates, it covers practical stress and strain scenarios including simple stress and strain, torsion, bending, elastic failure and buckling, with examples such as thin-walled structures, beams, struts and composite structures. New chapters cover matrix algebra, fracture

mechanics, and additional material considerations including creep and fatigue. The companion website offers solutions, and multiple-choice tests; and resources for adopting course instructors.

Routledge

**Market:** Mechanical Engineering

October 2021: 8.25 x 11: 528pp

Hb: 978-0-367-65141-1: **£130.00**

Pb: 978-0-367-65140-4: **£54.99**

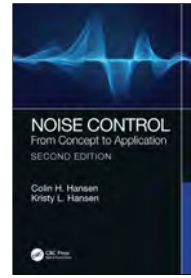
eBook: 978-1-003-12802-1

\* For full contents and more information, visit: [www.routledge.com/9780367651411](http://www.routledge.com/9780367651411)

2nd Edition

## Noise Control

From Concept to Application



**Colin H. Hansen**, University of Adelaide, Australia and **Kristy L. Hansen**, Finders University, Australia

The second edition of *Noise Control: From Concept to Application*, newly expanded and thoroughly updated, now includes 180 graded problems with solutions, plus 100 end-of-chapter problems with solutions available for instructors on the authors' website. Working from basic scientific principles, the authors show how an understanding of sound can be applied to real-world settings, working through numerous examples in detail and covering good practice in noise control for both new and existing facilities.

CRC Press

**Market:** Mechanical and Industrial Engineering

August 2021: 7 x 10: 482pp

Hb: 978-1-138-36901-6: **£140.00**

Pb: 978-1-138-36902-3: **£56.99**

eBook: 978-0-429-42887-6

Prev. Ed Hb: 978-0-415-35860-6

\* For full contents and more information, visit: [www.routledge.com/9781138369016](http://www.routledge.com/9781138369016)

## Modelling Hydrology, Hydraulics and Contaminant Transport Systems in Python

**Soumendra Nath Kuiry** and **Dhruvajyoti Sen**

This book covers theoretical aspects of the physical processes, derivation of the governing equations and their solutions focusing on hydraulics, hydrology and contaminant transport, including implementation of computer codes with practical examples. Python based computer codes for all the solution approaches are provided for better understanding and easy implementation. The mathematical models are demonstrated through applications and the results are analyzed through data tables, plots and comparison with analytical and experimental data. The concepts are used to solve practical applications like surface and ground water flow, flood routing, crop water requirement and irrigation scheduling.

CRC Press

**Market:** Engineering - Civil

November 2021: 6.14 x 9.21: 184pp

Hb: 978-0-367-25578-7: **£99.99**

eBook: 978-0-429-28857-9

\* For full contents and more information, visit: [www.routledge.com/9780367255787](http://www.routledge.com/9780367255787)

2nd Edition

## Railway Transportation Systems

Design, Construction and Operation



**Christos N. Pyrgidis**, Aristotle University of Thessaloniki, Greece

This comprehensive overview covers the entire range of railway passenger systems, from conventional and high-speed intercity systems to suburban, regional, operating on steep gradients, and urban ones. It also examines in depth freight railway systems transporting conventional loads, heavy loads, and dangerous goods.

This new edition brings two new chapters. One concerns pre-feasibility studies of urban rail projects, and the other analyses the operation of railway systems under specific weather conditions and natural phenomena. It is ideal for graduate

students, engineers, consultants, manufacturers, and transport company executives who need a reference and guide.

CRC Press

**Market:** Transport Engineering

October 2021: 7 x 10: 496pp

Hb: 978-0-367-49421-6: **£130.00**

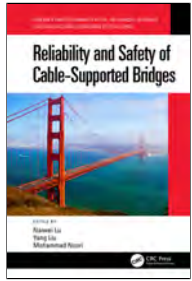
Pb: 978-0-367-49423-0: **£52.99**

eBook: 978-1-003-04607-3

Prev. Ed Hb: 978-1-482-26215-5

\* For full contents and more information, visit: [www.routledge.com/9780367494216](http://www.routledge.com/9780367494216)

## Reliability and Safety of Cable-Supported Bridges



Edited by Naiwei Lu, Yang Liu and Mohammad Noori

*Series: Resilience and Sustainability in Civil, Mechanical, Aerospace and Manufacturing Engineering Systems*

Reliability and Safety of Cable-Supported Bridges provides a comprehensive application and guidelines for system reliability techniques in cable-supported bridges. Serving as a practical educational resource for both undergraduate and graduate level students, practicing engineers, and researchers, it also intends to provide an intuitive appreciation for probability theory, statistical methods, and reliability analysis methods.

CRC Press

Market: Civil Engineering

June 2021: 6.14 x 9.21: 254pp

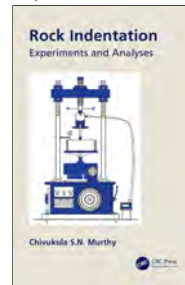
Hb: 978-0-367-77026-6: £89.99

eBook: 978-1-003-17059-4

\* For full contents and more information, visit: [www.routledge.com/9780367770266](http://www.routledge.com/9780367770266)

## Rock Indentation

Experiments and Analyses



Chivukula S.N. Murthy, Department of Mining Engineering, National Institute of Technology, Surathkal, INDIA

This book focusses on rock indentation and importance of specific drilling/cutting energy as a performance indicator for drilling/rock cutting. It aids in designing of drill bit and cutting pick, through performance evaluation for a given geometry. It further covers stress distribution along three axes in rock during load application, correlation of specific energy with properties of rocks and statistical modeling to generate mathematical equation to estimate the specific energy indentation, including performance prediction by artificial neural network modeling. Presented models can be used to assess the specific energy in rock indentation from the physico-mechanical properties of

rocks.

CRC Press

Market: Mining Engineering

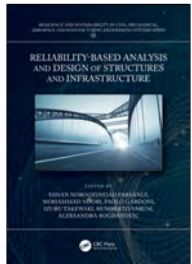
August 2021: 6.14 x 9.21: 256pp

Hb: 978-0-367-03030-8: £110.00

eBook: 978-0-429-01995-1

\* For full contents and more information, visit: [www.routledge.com/9780367030308](http://www.routledge.com/9780367030308)

## Reliability-Based Analysis and Design of Structures and Infrastructure



Edited by Ehsan Noroozinejad Farsangi, Mohammad Noori,

Paolo Gardoni, Izuru Takewaki, Kyoto University, Japan,

Humberto Varum and Aleksandra Bogdanovic

*Series: Resilience and Sustainability in Civil, Mechanical, Aerospace and Manufacturing Engineering Systems*

Reliability-based techniques help develop more accurate initial guidance for robust design and help to identify the sources of significant uncertainty in structural systems. This book presents an overview of the methods of classical reliability analysis and design most associated with structural reliability. It also introduces more modern methods and advancements, and emphasizes the most useful methods and techniques used in

reliability and risk studies, and elaborating their practical applications and limitations rather than detailed derivations.

CRC Press

Market: Civil Engineering

November 2021: 7 x 10: 544pp

Hb: 978-0-367-75808-0: £99.99

eBook: 978-1-003-19461-3

\* For full contents and more information, visit: [www.routledge.com/9780367758080](http://www.routledge.com/9780367758080)

## Reliability-Based Design in Soil and Rock Engineering

Enhancing Partial Factor Design Approaches

Bak Kong Low, formerly Nanyang Technological University, Singapore

Reliability-Based Design in Soil and Rock Engineering contains probabilistic analyses and reliability-based designs (RBD) for the enhancement of the Eurocode 7 (EC7) and the Load and Resistance Factor Design (LRFD) methods. An intuitive perspective and efficient computational procedure for the First-Order Reliability Method (FORM, which includes the Hasofer-Lind reliability index) is explained, together with discussions on the similarities and differences between the design point of EC7/LRFD and RBD-via-FORM. Renowned cases in soil and rock engineering are analysed both deterministically and probabilistically. This book is ideal for practitioners, graduate students and researchers.

CRC Press

Market: Civil Engineering

November 2021: 6.14 x 9.21: 368pp

Hb: 978-0-367-63139-0: £140.00

eBook: 978-1-003-11229-7

\* For full contents and more information, visit: [www.routledge.com/9780367631390](http://www.routledge.com/9780367631390)

## Seawater in Concrete Mix

Hidehori Hamada, Kyushu University, Japan, Nobuaki Otsuki, Tokyo Tech Annex, Bangkok, Thailand and Takahiro Nishida, National Institute of Maritime, Japan

Many parts of the world will soon suffer from a shortage of freshwater, so the effective use of seawater in concrete production could therefore become a crucial technology. The potential exists for the extensive use of seawater in concrete, especially with the addition of ground granulated blast-furnace slag, fly ash, or other mineral admixtures. The recent trend toward performance-based design makes this alternative more viable. *Seawater in Concrete Mix* provides a detailed overview of the fundamental knowledge of concrete engineering that is essential for the usage of seawater-mixed concrete.

CRC Press

Market: Civil Engineering

October 2021: 5.5 x 8.5: 128pp

Hb: 978-1-032-04667-9: £44.99

eBook: 978-1-003-19416-3

\* For full contents and more information, visit: [www.routledge.com/9781032046679](http://www.routledge.com/9781032046679)

2nd Edition

## Seismic Analysis and Design using the Endurance Time Method



Edited by Homayoon E. Estekanchi and Hassan A. Vafai

*Series: Resilience and Sustainability in Civil, Mechanical, Aerospace and Manufacturing Engineering Systems*

The endurance time method (ETM) is a seismic analysis procedure in which intensifying dynamic excitations are used as the loading function, and it provides many unique benefits in the design of structures. It can largely reduce the computational effort needed for the response history analysis of structures. Conceptual simplicity also makes ETM a useful tool for preliminary response history analysis of structural systems. This book serves as a comprehensive resource for students, researchers, and practicing structural engineers who want to familiarize themselves with the concepts and applications of the endurance time method (ETM) as a useful tool for dynamic structural analysis.

CRC Press

Market: Civil Engineering

October 2021: 6.14 x 9.21: 240pp

Hb: 978-1-032-10863-6: £89.99

eBook: 978-1-003-21747-3

\* For full contents and more information, visit: [www.routledge.com/9781032108636](http://www.routledge.com/9781032108636)

## Smart Cement

Development, Testing, Modeling and Real-Time Monitoring

Cumaraswamy Vipulanandan, University of Houston, USA

Over three billion metric tons of cement are produced annually worldwide, making concrete the most extensively used construction material. Self-sensing, or smart, cement allows real-time monitoring of performance through the entire service life of a concrete structure, for the detection of changing stresses, contamination, excessive temperature, gas leaks and pre-seismic activity. This is achieved by adding a very small proportion of conductive or semi-conductive fibers, such as carbon fibers to the bulk cement, making it piezoresistive, and enabling changes in the concrete's electrical resistivity in response to shear stress and strain to be monitored.

CRC Press

**Market:** Concrete / Civil Engineering

September 2021: 6.14 x 9.21: 446pp

Hb: 978-0-367-27837-3: **£140.00**

eBook: 978-0-429-29817-2

\* For full contents and more information, visit: [www.routledge.com/9780367278373](http://www.routledge.com/9780367278373)

## Soft Ground Tunnel Design



Benoit Jones, Inbye Engineering, UK

This book is essentially a manual for the design of tunnels and other underground spaces in soft ground – soil in contrast to rock. It focuses on stability, prediction of ground movements, and structural design of the lining. It shows that the choice of excavation and support methods depends on ground stability, limitation of damage to the existing built environment and health, safety and environmental considerations.

It builds on the basic principles of soil-structure interaction, the three-dimensional effects of construction sequence and the effects of construction on other surface or subsurface structures in steps of gradually increasing complexity.

CRC Press

**Market:** Engineering - Civil

October 2021: 6.14 x 9.21: 584pp

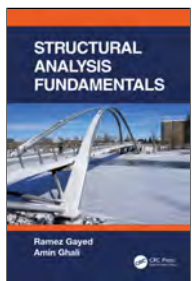
Hb: 978-0-367-41959-2: **£150.00**

Pb: 978-1-482-25467-9: **£59.99**

eBook: 978-1-482-25468-6

\* For full contents and more information, visit: [www.routledge.com/9780367419592](http://www.routledge.com/9780367419592)

## Structural Analysis Fundamentals



Ramez Gayed, Thyssenkrupp Industrial Solutions, Canada and Amin Ghali, University of Calgary, Alberta, Canada

This covers all that is taught in graduate and undergraduate courses in the analysis required for of structural design, including the calculation of internal forces induced by different loads. Engineers need a broad sense of structural behaviour under different loading and have to be able to make intuitive checks of computing results.

It applies linear analysis of structures of all types, including plane and space trusses, plane and space frames, plane and eccentric grids, plates and shells, and assemblage of finite-elements. It also treats plastic and time-dependent responses of structures to static loading and dynamic analysis of structures.

CRC Press

**Market:** Civil and Structural Engineering

September 2021: 7 x 10: 552pp

Hb: 978-0-367-25262-5: **£105.00**

Pb: 978-0-367-25261-8: **£44.99**

eBook: 978-0-429-28685-8

\* For full contents and more information, visit: [www.routledge.com/9780367252625](http://www.routledge.com/9780367252625)

## The American Construction Industry

Its Historical Evolution and Potential Future



Brian Bowen

The American Construction Industry meticulously chronicles the evolution of the construction industry from its roots in the medieval guild system to the high-tech jobsite of tomorrow. While celebrating more than two millennia of progress and innovation, this resource for students and professionals uncovers the ways of working that crossed the Atlantic with the earliest European settlers and will continue to define building trades in the United States today and in the years and decades to come. Full color illustrations bring the past to life and provide visual links to the present day.

Routledge

**Market:** Construction

August 2021: 6.14 x 9.21: 226pp

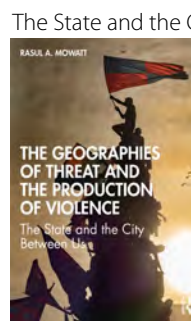
Hb: 978-0-367-65540-2: **£145.00**

Pb: 978-0-367-65438-2: **£56.99**

eBook: 978-1-003-13000-0

\* For full contents and more information, visit: [www.routledge.com/9780367655402](http://www.routledge.com/9780367655402)

## The Geographies of Threat and the Production of Violence



Rasul A Mowatt

"Truly the book for our times" –Karl Spracklen, co-author, *Protests as Events*

*The Geographies of Threat and the Production of Violence* exposes the racism and xenophobia encoded in urban infrastructure—from highways cleaving neighborhoods of color to laws and policies fortifying even more unbreachable boundaries. This synthesis of narrative and theory resurrects neglected episodes of state violence and reveals how the built environment that continues to enable it today.

Routledge

**Market:** American/Urban Studies

September 2021: 7 x 10: 376pp

Hb: 978-0-367-71154-2: **£106.00**

Pb: 978-0-367-70894-8: **£42.99**

eBook: 978-1-003-14954-5

\* For full contents and more information, visit: [www.routledge.com/9780367711542](http://www.routledge.com/9780367711542)

## Vibration Mitigation Systems in Structural Engineering



Okyay Altay, Center for Wind and Earthquake Engineering, Chair of Structural Analysis and Dynamics, Faculty of Civil Engineering RWTH Aachen University, Germany

The scope of the book is the application of vibration mitigation systems in structural engineering. The intended content includes the theoretical background covering aspects from both structural dynamics and control engineering. Moreover, passive, active and semi-active devices will be explained in detail giving mathematical principles, design considerations and application examples. The proposed book will also contain detailed information about structural monitoring, as an essential part of the active/semi-active systems. Therefore, it aims to give a full overview about passive, active and semi-active systems in the

specific context of civil engineering.

CRC Press

**Market:** Civil Engineering

August 2021: 6.14 x 9.21: 390pp

Hb: 978-1-138-56416-9: **£140.00**

eBook: 978-1-315-12224-3

\* For full contents and more information, visit: [www.routledge.com/9781138564169](http://www.routledge.com/9781138564169)

## Water Environment Modeling

Clark C.K. Liu, University of Hawaii, USA, Pengzhi Lin, Sichuan University, China and Hong Xiao, State Key Laboratory of Hydraulics, Sichuan University

Pollutant and waste loading of the water environment – rivers, lakes, estuaries, aquifers, and coastal waters – need to be modelled and simulated effectively for the selection and application of efficient remedial measures. This textbook covers the formulation and application of mathematical models of water flow and mass transport, both simple analytical models and comprehensive numerical models. It provides many examples and exercises that are derived from actual case studies. It suits advanced undergraduates and graduate students in civil and environmental engineering and related academic fields, and serves as a reference book for practicing engineers and scientists.

CRC Press

**Market:** Environmental Engineering

November 2021: 6.14 x 9.21: 344pp

Hb: 978-0-367-44244-6: £74.99

Pb: 978-0-367-44243-9: £42.99

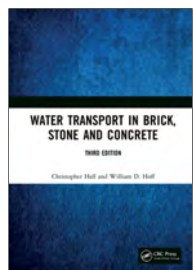
eBook: 978-1-003-00849-1

\* For full contents and more information, visit: [www.routledge.com/9780367442446](http://www.routledge.com/9780367442446)



3rd Edition

## Water Transport in Brick, Stone and Concrete



Christopher Hall, University of Edinburgh, UK and William D. Hoff, University of Manchester, UK

This presents a unified description of transport processes involving saturated and unsaturated flow in porous inorganic materials and structures. It sets out fundamental physics and materials science, mathematical description and experimental measurement as a basis for engineering design and construction practice. This latest edition combines a systematic presentation of the scientific and technical literature, with some new analyses of technical topics and processes such as sorption isotherm, temperature dependence of sorptivity, time-dependent properties of cement-based materials, layered materials,

air-trapping and new computational packages.

CRC Press

**Market:** Concrete Technology and Civil Engineering Materials

July 2021: 6.14 x 9.21: 466pp

Hb: 978-0-367-37126-5: £150.00

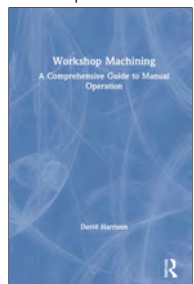
eBook: 978-0-429-35274-4

Prev. Ed Hb: 978-0-415-56467-0

\* For full contents and more information, visit: [www.routledge.com/9780367371265](http://www.routledge.com/9780367371265)

## Workshop Machining

A Comprehensive Guide to Manual Operation



David Harrison, Newcastle College, UK

*Workshop Machining* is a comprehensive textbook that explains the fundamental principles of manually operating machinery to form shapes in a variety of materials. It bridges the gap between traditional toolmaking skills and programming and operation of CNC machines in a production environment. Everything is covered from the basic machine controls to advanced cutting operations using a wide range of tooling and work holding devices. Theory and practice are shown via mixture of diagrams, text and illustrated worked examples, as well as through exercises.

Routledge

**Market:** Manufacturing and Mechanical Engineering

November 2021: 6.14 x 9.21: 488pp

Hb: 978-0-367-27840-3: £105.00

Pb: 978-0-367-27839-7: £42.99

eBook: 978-0-429-29819-6

\* For full contents and more information, visit: [www.routledge.com/9780367278403](http://www.routledge.com/9780367278403)



## 2D Electrostatic Fields

A Complex Variable Approach

Robert L. Coffie, RLC Solutions, USA.

This book demonstrates how to use functions of a complex variable to solve engineering problems that obey the 2D Laplace equation. It is written with the engineer/physicist in mind and the majority of the book focuses on electrostatics. Key highlights in the book include, 2D electrostatics formulated in terms of complex variables, more than 60 electrostatic field maps, comprehensive treatment for obtaining Green's functions with conformal mapping, fully worked Schwarz-Christoffel transformations to more than usual number of problems. Detailed solutions to all end of chapter problems are available on the book's page on Routledge website.

CRC Press

**Market:** Engineering - Electrical

September 2021: 6.14 x 9.21: 386pp

Hb: 978-0-367-76975-8: **£99.99**

eBook: 978-1-003-16918-5

\* For full contents and more information, visit: [www.routledge.com/9780367769758](http://www.routledge.com/9780367769758)

## Advanced Indium Arsenide-Based HEMT Architectures for Terahertz Applications



Edited by N. Mohankumar, GITAM University, Bangalore

High electron mobility transistor (HEMT) has better performance potential than the conventional MOSFETs. Further, InAs is a perfect candidate for the HEMT device architecture owing to its peak electron mobility. This book characterizes the HEMT based on InAs III-V material to achieve outstanding current and frequency performance. It explains different types of device architectures available to enhance the performance including InAs-based single gate (SG) HEMT and double gate (DG) HEMT. The noise analysis of InAs-based SG and DG-HEMT is also discussed. The overall aim of this book is to characterize the InAs device to achieve terahertz frequency regime with proper device parameters.

CRC Press

**Market:** Circuits and Devices

October 2021: 6.14 x 9.21: 142pp

Hb: 978-0-367-55414-9: **£100.00**

eBook: 978-1-003-09342-8

\* For full contents and more information, visit: [www.routledge.com/9780367554149](http://www.routledge.com/9780367554149)

## Advanced Controls for Intelligent Buildings

A Holistic Approach for Successful Businesses



Siddharth Goyal, LG Electronics, USA.

This book focuses primarily on both technical and business aspects needed to select, design, develop and deploy control application (or product) successfully for multiple components in building systems. Providing a wide overview of the state-of-art in controls and building systems, providing guidance on developing an end-to-end system in relation to business fundamentals (distribution channels, stakeholders, marketing, supply-chain and financial management), the book is ideal for fourth-year control/mechanical/electrical engineering undergraduates, graduate students, and practitioners including business leaders concerned with smart building technology.

CRC Press

**Market:** Engineering - Electrical

July 2021: 6.14 x 9.21: 270pp

Hb: 978-1-032-00965-0: **£99.99**

Pb: 978-1-032-00967-4: **£42.99**

eBook: 978-1-003-17658-9

\* For full contents and more information, visit: [www.routledge.com/9781032009650](http://www.routledge.com/9781032009650)

## An Introduction to Safety Grounding



Asser A. Zaky

Protective or safety grounding is of vital importance for the protection of individuals from electric shock. To many electrical engineers the notion of grounding is nebulous and safety grounding is quite often confused with neutral grounding of the power supply. The main objective of this book is to give the reader a better understanding of safety grounding, why it is needed, where it is needed, and what are the requirements which must be met in order to have an effective grounding system. This book is a practical guide that provides comprehensive coverage of all types of grounding requirements and is intended for students and practicing electrical engineers alike.

CRC Press

**Market:** Electrical Engineering

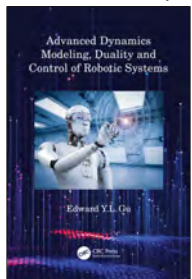
July 2021: 6.14 x 9.21: 182pp

Hb: 978-0-367-75871-4: **£84.99**

eBook: 978-1-003-16463-0

\* For full contents and more information, visit: [www.routledge.com/9780367758714](http://www.routledge.com/9780367758714)

## Advanced Dynamics Modeling, Duality and Control of Robotic Systems



Edward Y.L. Gu, Oakland University, USA.

This book provides detailed fundamental theoretical reviews and preparations necessary for developing advanced dynamics modeling and control strategies for various types of robotic systems. This research book specifically addresses and discusses the uniqueness issue of representing orientation or rotation, and further proposes an innovative isometric embedding approach. Many computer simulations and realistic 3D animations to verify the new theories and algorithms are included in the book as well. It is a great reference text for undergraduate juniors and seniors, graduate students, researchers, and engineers interested in the areas of robotics, control and applications.

CRC Press

**Market:** Engineering - Electrical

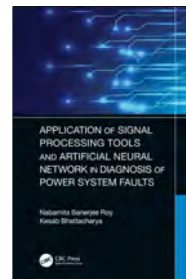
September 2021: 6.14 x 9.21: 320pp

Hb: 978-0-367-65371-2: **£89.99**

eBook: 978-1-003-12916-5

\* For full contents and more information, visit: [www.routledge.com/9780367653712](http://www.routledge.com/9780367653712)

## Application of Signal Processing Tools and Artificial Neural Network in Diagnosis of Power System Faults



Nabamita Banerjee Roy and Kesab Bhattacharya

Accurate, fast, and reliable fault classification techniques are an important operational requirement in modern-day power transmission systems. This book gives an elaboration of the power system faults and the conventional techniques of fault analysis. The book will provide necessary information and knowledge to an Engineering student and practitioners to carry out research activity. Readers will learn the method of programming and simulation of any network in MATLAB. They will learn how to extract features from a signal waveform by using a suitable signal processing toolbox. They will also learn the application of Artificial Neural Network.

CRC Press

**Market:** Electrical Engineering

July 2021: 6.14 x 9.21: 143pp

Hb: 978-0-367-43113-6: **£99.99**

eBook: 978-0-367-43114-3

\* For full contents and more information, visit: [www.routledge.com/9780367431136](http://www.routledge.com/9780367431136)

## Applied Mathematical Modeling and Analysis in Renewable Energy

Edited by **Manoj Sahni**, Pandit Deendayal Petroleum University, India, and **Ritu Sahni**, Institute of Advanced Research, India.

*Series: Mathematical Engineering, Manufacturing, and Management Sciences*

Discussing mathematical modeling techniques for transitional fluid phase flows in coal bed methane reservoir, and small scale pumped storage with micro optimization model (HOMER), this reference text will serve as a useful text for graduate students and academic researchers in the fields of electrical engineering, environmental engineering, mechanical engineering, and civil engineering.

CRC Press

**Market:** Electrical and Electronics Engineering

October 2021: 6.14 x 9.21: 216pp

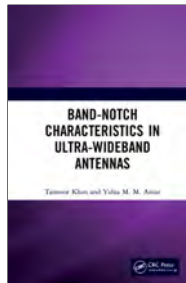
Hb: 978-0-367-74698-8: **£89.99**

eBook: 978-1-003-15912-4

\* For full contents and more information, visit: [www.routledge.com/9780367746988](http://www.routledge.com/9780367746988)



## Band-Notch Characteristics in Ultra-Wideband Antennas



Edited by **Taimoor Khan**, National Institute of Technology Silchar, India and **Yahia M.M. Antar**, Royal Military College of Canada, Ontario

This book comprehensively reviews ultra-wideband and ultra-wideband MIMO antennas with band notched characteristics with a focus on interference cancellation. Overall, it covers different techniques of cancelling the electromagnetic interference in ultra-wideband (UWB) in a concise volume. *Band-Notch Characteristics in Ultra-Wideband Antennas* is aimed at researchers and graduate students in Electrical and Antenna Engineering.

CRC Press

**Market:** Microwaves, RF and Electromagnetics

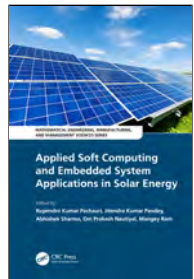
June 2021: 6.14 x 9.21: 128pp

Hb: 978-0-367-75472-3: **£140.00**

eBook: 978-1-003-16300-8

\* For full contents and more information, visit: [www.routledge.com/9780367754723](http://www.routledge.com/9780367754723)

## Applied Soft Computing and Embedded System Applications in Solar Energy



Edited by **Rupendra Kumar Pachauri**, **Jitendra Kumar Pandey**, **Abhishek Sharmu**, **Om Prakash Nautiyal** and **Mangey Ram**

*Series: Mathematical Engineering, Manufacturing, and Management Sciences*

This book deals with energy systems and soft-computing methods from a wide range of approaches and application perspectives. The authors examine how embedded system applications can deal with the smart monitoring and controlling of stand-alone and grid connected solar PV systems for increased efficiency. The book is intended for students, professionals, and researchers in electrical and computer engineering fields,

working on alternative energy-related issues such as problems with renewable energy resources (wind, solar, sea, etc.), micro grid and smart grid projects.

CRC Press

**Market:** Electrical Engineering

May 2021: 6.14 x 9.21: 254pp

Hb: 978-0-367-62512-2: **£120.00**

eBook: 978-1-003-12123-7

\* For full contents and more information, visit: [www.routledge.com/9780367625122](http://www.routledge.com/9780367625122)

## Big Data Analytics and Intelligent Techniques for Smart Cities



Edited by **Kolla Bhanu Prakash**, **Janmenjoy Nayak**, **B tp Madhhav**, **Sanjeevikumar Padmanaban**, Department of Business Development and Technology, Aarhus University – Herning Campus, Denmark and **Valentina Emilia Balas**, Aurel Vlaicu University of Arad, Romania

It will be useful as a reference text for graduate students in different areas including electrical engineering, computer science engineering, civil engineering, and electronics and communications engineering

CRC Press

September 2021: 6.14 x 9.21: 302pp

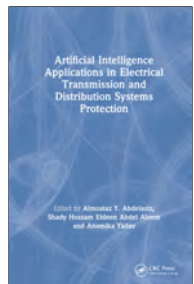
Hb: 978-0-367-75355-9: **£110.00**

eBook: 978-1-003-18735-6

\* For full contents and more information, visit: [www.routledge.com/9780367753559](http://www.routledge.com/9780367753559)



## Artificial Intelligence Applications in Electrical Transmission and Distribution Systems Protection



Edited by **Almoataz Y. Abdelaziz**, Faculty of Engineering, Ain Shams University, Cairo, Egypt, **Shady Hossam Eldeen Abdel Aleem**, 15th of May Higher Institute of Engineering, Cairo, Egypt and **Anamika Yadav**, Department of Electrical Engineering National Institute of Technology Raipur, India

Protection of power transmission and distribution lines is vital for reliability and security of the system. Pattern recognition methods enable detection, classification, and prediction, which are essential functions for the protection schemes to develop smarter transmission systems. The focus of this book is to consider the application of AI methods in the field of protection of different types and topologies of transmission and distribution lines. It explains the latest pattern-recognition-based methods

applied to detection, classification, and location of a fault in the transmission and distribution lines, and to manage smart power systems including all the pertinent aspects.

CRC Press

**Market:** Power Engineering

October 2021: 6.14 x 9.21: 568pp

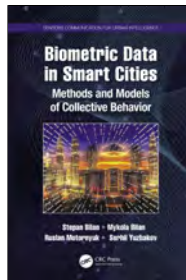
Hb: 978-0-367-55234-3: **£140.00**

eBook: 978-0-367-55237-4

\* For full contents and more information, visit: [www.routledge.com/9780367552343](http://www.routledge.com/9780367552343)

## Biometric Data in Smart Cities

Methods and Models of Collective Behavior



**Stepan Bilan**, State Economy and Technology University of Transport, Ukraine, **Mykola Bilan**, **Ruslan Motornyyuk**, Main Information and Computing Center, Ukraine. and **Serhii Yuzhakov**

*Series: Sensors Communication for Urban Intelligence*

This book describes methods for processing biometric information in a smart city environment. The theoretical foundations of building a biometric multisensor network, which allows you to create a unified urban biometric community, are considered. Methods of biometric identification by gait parameters and the geometric shape of the auricle are described, which are effectively used in a smart city. A method for tracking dynamic changes in the state of a smart city in real time is considered. Models of behavior of colonies of living organisms, their formation, movement and interaction are described on the basis of the technology of cellular automata with active cells.

CRC Press

**Market:** Engineering - Electrical

July 2021: 6.14 x 9.21: 228pp

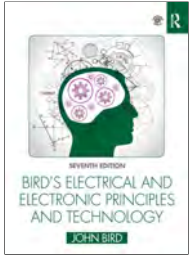
Hb: 978-0-367-65024-7: **£84.99**

eBook: 978-1-003-12746-8

\* For full contents and more information, visit: [www.routledge.com/9780367650247](http://www.routledge.com/9780367650247)

7th Edition

## Bird's Electrical and Electronic Principles and Technology



**John Bird**, Defence College of Technical Training, UK

This practical textbook introduces the essentials of electrical and electronic engineering, and their uses in technology. It sets out detailed examples and lab experiments, for future technicians in electrical engineering, electronics, and telecommunications, and is ideal for vocational courses at Levels 2 and 3, foundation degrees and introductory courses for undergraduates. Now with more on glass batteries, and global climate change and the future of electricity production. The companion website gives resources for both students and lecturers, including lists of essential formulae, multiple choice tests, and full solutions for all 900 further questions.

Routledge

**Market:** Further Education / Electrical Engineering

October 2021: 8.25 x 11: 592pp

Hb: 978-0-367-67237-9: **£160.00**

Pb: 978-0-367-67235-5: **£36.99**

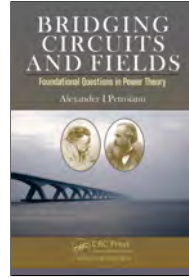
eBook: 978-1-003-13040-6

\* For full contents and more information, visit: [www.routledge.com/9780367672379](http://www.routledge.com/9780367672379)



## Bridging Circuits and Fields

Foundational Questions in Power Theory



**Alexander I. Petroianu**, University of Cape Town, South Africa

The book proposes a new paradigm for power theory that can be used in power systems and electrical networks. This new approach links electromagnetic and circuit theories in a coherent way by taking a fresh look at the old debates of Poynting vector and reactive power as well as offering a mathematically consistent and physically coherent interpretation of the power concept and the mechanism of power transmission. Seeing the advances in geometrical optics, quantum mechanics, and geometric algebra, the monograph illustrates that, to paraphrase Heaviside, there is no finality in the development of a vibrant discipline such as power theory.

CRC Press

**Market:** Engineering - Electrical

November 2021: 6.14 x 9.21: 174pp

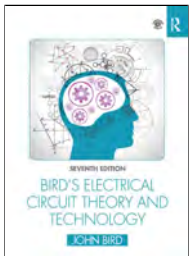
Hb: 978-1-138-71043-6: **£120.00**

eBook: 978-1-315-20067-5

\* For full contents and more information, visit: [www.routledge.com/9781138710436](http://www.routledge.com/9781138710436)

7th Edition

## Bird's Electrical Circuit Theory and Technology



**John Bird**, Defence College of Technical Training, UK

This fully comprehensive text explains electrical circuit theory and associated technology topics in a straightforward manner, supported by practical engineering examples and applications to ensure that readers can relate theory to practice. Containing over 800 worked examples, this is an excellent text for a range of courses, in particular for Degree and Foundation Degree in electrical principles, circuit theory, telecommunications, and electrical technology.

Routledge

**Market:** Further Education / Electrical Engineering

October 2021: 8.25 x 11: 930pp

Hb: 978-0-367-67224-9: **£160.00**

Pb: 978-0-367-67222-5: **£44.99**

eBook: 978-1-003-13033-8

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2nd Edition

## Electric Machines

Two Volume Set

**Ion Boldea**, University Politehnica Timisoara, Romania and **Lucian N. Tutelea**, Politehnica University of Timisoara, Romania

With its comprehensive coverage of the state of the art, this second edition of the book comprises two volumes, and introduces the basic types of transformers and electric machines and also discusses advanced subjects in electric machines, starting from principles, to applications and case studies with ample graphical results. The first book covers circuit modeling characteristics and performance characteristics under steady state. The second book covers topics such as modeling of transients and control principles. Both the volumes include numerical examples and case studies, and numerous computer simulation programs in MATLAB and Simulink® are also available online.

CRC Press

**Market:** Engineering - Electrical

October 2021: 6.14 x 9.21: 832pp

Hb: 978-0-367-37562-1: **£180.00**

eBook: 978-1-003-21603-2

\* For full contents and more information, visit: [www.routledge.com/9780367375621](http://www.routledge.com/9780367375621)



## Brain and Behavior Computing



Edited by **Mridu Sahu**, Department of IT, National Institute of Technology Raipur, India and **G R Sinha**, MIIT, Myanmar Brain and Behavior Computing provides an insight into the functions of the human brain. This book provides emphasis on brain and behavior computing with different modalities available such as signal and image processing, data science, statistics, distributed computing including fundamentals, model, algorithms, case studies, and research scope. It further illustrates brain signals sources and how the brain signal can process, manipulate and transform in different domains to extract information about the physiological condition of the brain. Emphasis is on real challenges in brain signal processing for variety of applications for analysis, classification, clustering and

identification.

CRC Press

**Market:** Signal Processing

June 2021: 6.14 x 9.21: 428pp

Hb: 978-0-367-55297-8: **£110.00**

eBook: 978-1-003-09288-9

\* For full contents and more information, visit: [www.routledge.com/9780367552978](http://www.routledge.com/9780367552978)

2nd Edition

## Electric Machines

Steady State and Performance with MATLAB®

**Ion Boldea**, University Politehnica of Timisoara, Romania. and **Lucian Tutelea**, Politehnica University of Timisoara, Romania

With its comprehensive coverage of the state of the art, this second edition of the book introduces the basic types of transformers and electric machines. It covers circuit modeling characteristics and performance characteristics under steady state, testing techniques and preliminary electromagnetic-thermic dimensioning. It includes solved numerical examples and special cases to illustrate new electric machines with strong industrialization potential. Many computer simulation programs in MATLAB and Simulink® are included that illustrate performance characteristics present in the chapters and may be used as homework order to facilitate a deep grasping of fundamental issues.

CRC Press

**Market:** Engineering - Electrical

October 2021: 6.14 x 9.21: 400pp

Hb: 978-0-367-37471-6: **£110.00**

eBook: 978-1-003-21451-9

Prev. Ed Hb: 978-1-420-05572-6

\* For full contents and more information, visit: [www.routledge.com/9780367374716](http://www.routledge.com/9780367374716)



2nd Edition

**Electric Machines**

Transients, Control Principles, Finite Element Analysis and Optimal Design with MATLAB®

Ion Boldea, University Politehnica Timisoara, Romania and Lucian N. Tutelea, Politehnica University of Timisoara, Romania

This second edition extensively covers advanced issues/subjects in electric machines, starting from principles, to applications and case studies with ample graphical (numerical) results. This textbook is intended for second (and third) semester course, treating topics such as modeling of transients, control principles, electromagnetic and thermal finite element Analysis and optimal design (dimensioning). Case studies, numerical examples and lots of discussion of FEM results for PMSM and IM throughout the book. Numerous computer simulation programs in MATLAB and Simulink® are available online that illustrate performance characteristics present in the chapters.

CRC Press

**Market:** Engineering - Electrical  
October 2021: 6.14 x 9.21: 432pp  
Hb: 978-0-367-37565-2: **£110.00**  
eBook: 978-1-003-21601-8

\* For full contents and more information, visit: [www.routledge.com/9780367375652](http://www.routledge.com/9780367375652)**Electronic Circuit Analysis using LTSpice XVII Simulator**

A Practical Guide for Beginners



Pooja Mohindru, Punjabi University, India. and Pankaj Mohindru, Punjabi University, India.

The text covers the theory of drafted electronic and electrical circuits in detail and explained by taking all the parametric effects into account so that the readers can understand the design and simulation process. It will be a useful text for undergraduate, graduate students, and academic researchers in the areas including electrical and electronics and communications engineering.

CRC Press

**Market:** Electrical and Electronics Engineering  
August 2021: 6.14 x 9.21: 236pp  
Hb: 978-1-032-04076-9: **£74.99**  
eBook: 978-1-003-19948-9

\* For full contents and more information, visit: [www.routledge.com/9781032040769](http://www.routledge.com/9781032040769)**Electric Vehicle Integration in a Smart Microgrid Environment**

Edited by Mohammad Saad Alam and Mahesh Krishnamurthy

As EVs find wider acceptance with major advancements in high efficiency drivetrain and vehicle design, it has become clear that there is a need for system level understanding of energy storage and management in a microgrid environment. Practical issues such as fleet management, coordinated operation, re-purposing of batteries and environmental impact of recycling and disposal need to be carefully studied in the context of an ageing grid infrastructure. This book explores such as perspective with contributions from leading experts on planning, analysis, optimization and management of electrified transportation and the transportation infrastructure.

CRC Press

**Market:** Engineering - Electrical  
August 2021: 6.14 x 9.21: 382pp  
Hb: 978-0-367-42391-9: **£110.00**  
eBook: 978-0-367-42392-6

\* For full contents and more information, visit: [www.routledge.com/9780367423919](http://www.routledge.com/9780367423919)**Evolutionary Optimization Algorithms**

Altaf Q. H. Badar, NIT Warangal, India

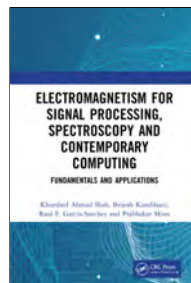
Discussing evolutionary optimization algorithms with the help of MATLAB and Python programming, this text will be useful as a reference text for senior undergraduate and graduate students in the field of electrical engineering, electronics engineering, mechanical engineering, and computer science and engineering. It discusses important algorithms including genetic algorithm, differential evolution, particle swarm optimization, artificial bee colony, grey wolf optimization, whale optimization and gravitational search algorithm.

CRC Press

**Market:** Electrical Engineering  
October 2021: 6.14 x 9.21: 296pp  
Hb: 978-0-367-75054-1: **£89.99**  
eBook: 978-1-003-20647-7

\* For full contents and more information, visit: [www.routledge.com/9780367750541](http://www.routledge.com/9780367750541)**Electromagnetism for Signal Processing, Spectroscopy and Contemporary Computing**

Fundamentals and Applications



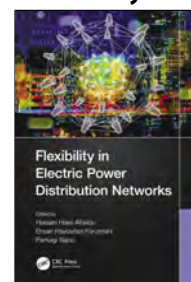
Khurshed Ahmad Shah, Cluster University Srinagar-Jammu and Kashmir, India, Brijesh Kumbhani, Indian Institute of Technology Ropar, Punjab, India., Raul F. Garcia-Sanchez, Department of Physics & Astronomy, Howard University, Washington, USA. and Prabhakar Misra, Howard University, USA

The proposed textbook will enable the readers to understand fundamental concepts of electromagnetism and its applications in signal processing, spectroscopy and allied fields. It will also familiarize the readers with the concepts of electric field, magnetic field and electromagnetic theory, communication principals and applications, spectroscopic applications of electromagnetism and modern approaches of computing. It

will be useful for senior undergraduate and graduate students in the field of electrical engineering, electronics and communication engineering.

CRC Press

**Market:** Electrical Engineering  
October 2021: 6.14 x 9.21: 264pp  
Hb: 978-0-367-75423-5: **£89.99**  
eBook: 978-1-003-21346-8

\* For full contents and more information, visit: [www.routledge.com/9780367754235](http://www.routledge.com/9780367754235)**Flexibility in Electric Power Distribution Networks**

Edited by Hassan Haes Alhelou, Tisheen Univ, Syria, Ehsan Heydariyan-Forushani, EEPDC, Syria. and Pierluigi Siano, Univ Degli Studi de Salerno, Italy.

There is a great research gap related to renewable-based distribution network planning with flexibility point of view. This book discusses the additional flexibility needs introduced by renewable energy sources (RESs) and describes general approaches to analyze the need for and provision of additional flexibility in future distribution networks at both planning and operational time frames. It successfully suggests new solutions and techniques to increase the flexibility in distribution systems. This book also highlights the needs for moving towards smart distribution grids in order to enhance the flexibility in modern

and future power systems.

CRC Press

**Market:** Engineering - Electrical  
July 2021: 6.14 x 9.21: 433pp  
Hb: 978-0-367-64141-2: **£140.00**  
eBook: 978-1-003-12232-6

\* For full contents and more information, visit: [www.routledge.com/9780367641412](http://www.routledge.com/9780367641412)

## Fundamentals of Reaction Flowmeters



Horia Mihai Mojit, Control and Instrumentation Association of Romania, Romania

This pioneering book includes both the new elaborated method of the flow measurement, named "the reaction force method of flow measurement", including its specific "reaction measurement system" which ensures its practical implementation, and the new basic types of flowmeters, named accordingly "reaction flowmeters". There are details on the individual (single) reaction flow meters, configured both without and with moving parts, the specific connections of two reaction flowmeters, named "extended reaction flowmeters", and the bypass type reaction flowmeters.

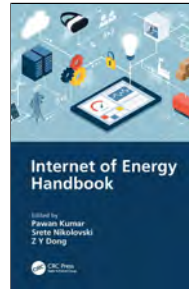
CRC Press

**Market:** Engineering - Electrical  
July 2021: 6.14 x 9.21: 129pp  
Hb: 978-1-032-02168-3: **£120.00**  
eBook: 978-1-003-18219-1

\* For full contents and more information, visit: [www.routledge.com/9781032021683](http://www.routledge.com/9781032021683)



## Internet of Energy Handbook



Edited by Pawan Kumar, Thapar Institute of Engineering & Technology, India, Srete Nikolovski, University of Osijek, Croatia and Z Y Dong, University of New South Wales, Australia

The Internet of Energy (IoE), with the integration of advanced information and communication technologies (ICT), has led to a transformation of traditional networks to smart systems. This handbook of research on Internet of Energy provides updated knowledge in the field of energy management with an Internet of Things (IoT) perspective. It explains the technological developments for energy management leading to reduction in energy consumption through topics like smart energy systems, smart sensors, communication, techniques and utilization.

Dedicated sections cover varied aspects related to renewable sources of energy, power distribution and generation and so forth.

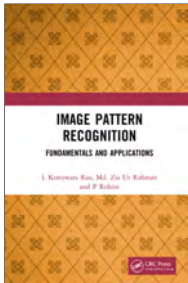
CRC Press

**Market:** Networking Communications  
June 2021: 6.14 x 9.21: 248pp  
Hb: 978-0-367-49964-8: **£99.99**  
eBook: 978-1-003-04834-3

\* For full contents and more information, visit: [www.routledge.com/9780367499648](http://www.routledge.com/9780367499648)

## Image Pattern Recognition

Fundamentals and Applications



L Koteswara Rao, Koneru Lakshmaiah Education Foundation, Telangana, India, Md. Zia Ur Rahman, School of Electrical Sciences, K L University, KLEF, Andhrapradesh, India and P Rohini, Icfai Foundation For Higher Education, India

The proposed textbook explores two methods of image retrieval including combination of color and directional local extrema patterns, and combination of gabor features and directional local extrema patterns. It covers applications of image pattern recognition such as automatic target recognition in defence sector, face recognition, optical character recognition, object recognition in aerial/satellite photographs. It will be a valuable resource for senior undergraduate and graduate students in the fields of electrical engineering and electronics and

communications engineering.

CRC Press

**Market:** Engineering-Electrical  
October 2021: 6.14 x 9.21: 168pp  
Hb: 978-0-367-64216-7: **£74.99**  
eBook: 978-1-003-12351-4

\* For full contents and more information, visit: [www.routledge.com/9780367642167](http://www.routledge.com/9780367642167)



## Internet of Things

Robotic and Drone Technology

Edited by Nitin Goyal, Sharad Sharma, Arun Kumar Rana and Suman Lata Tripathi, Lovely Professional University, India

Series: *Smart Engineering Systems: Design and Applications*

This reference discusses applications for crowdsensing and sourcing, as well as smart applications of robotics and drone by deploying the Internet of Things (IoT). It further explores the application of manufacturing with the help of robotics for smart industries. It will serve as a useful text for graduate students and professionals in the fields of electrical engineering, electronics engineering, computer science, and mechanical engineering.

CRC Press

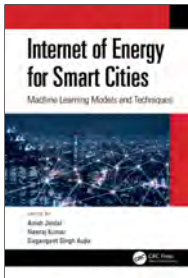
**Market:** Electrical and Electronics Engineering  
September 2021: 6.14 x 9.21: 328pp  
Hb: 978-0-367-75453-2: **£89.99**  
eBook: 978-1-003-18161-3

\* For full contents and more information, visit: [www.routledge.com/9780367754532](http://www.routledge.com/9780367754532)



## Internet of Energy for Smart Cities

Machine Learning Models and Techniques



Edited by Anish Jindal, Lancaster University, United Kingdom, Neeraj Kumar and Gagangeet Singh Aujla, Newcastle University, United Kingdom

Machine learning approaches has the capability to learn and adapt to the constantly evolving demands of large Internet-of-energy (IoE) network. The focus of this book is on using the machine learning approaches to present various solutions for IoE network in smart cities to solve various research gaps such as demand response management, resource management and effective utilization of the underlying ICT network. It provides in-depth knowledge to build the technical understanding for the reader to pursue various research problems in this field. Moreover, the example problems in smart

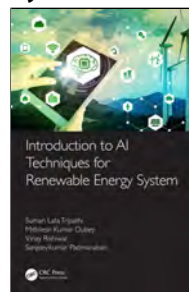
cities and their solutions using machine learning are provided as relatable to the real-life scenarios.

CRC Press

**Market:** Networking Communications  
July 2021: 6.14 x 9.21: 322pp  
Hb: 978-0-367-49775-0: **£120.00**  
eBook: 978-1-003-04731-5

\* For full contents and more information, visit: [www.routledge.com/9780367497750](http://www.routledge.com/9780367497750)

## Introduction to AI Techniques for Renewable Energy System



Edited by Suman Lata Tripathi, Lovely Professional University, India., Mithilesh Kumar Dubey, Lovely Professional University, India, Vinay Rishiwal, MJP Rohilkhand University, India and Sanjeevikumar Padmanaban, Department of Business Development and Technology, Aarhus University – Herning Campus, Denmark

The book summarizes commonly used AI methodologies in renewable energy, with a particular emphasis on neural networks, fuzzy logic, and genetic algorithms. Book outlines selected AI applications for renewable energy. In particular, discusses methods using the AI approach for the following applications using suitable examples: prediction and modeling of solar radiation, seizing, performances, and controls of the solar photovoltaic (PV) systems. It provides better insights to the solar cell, biofuels, wind and other renewable energy system design and characterization, including the equipment for smart energy systems.

CRC Press

**Market:** Engineering-Electrical  
September 2021: 6.14 x 9.21: 448pp  
Hb: 978-0-367-61092-0: **£140.00**  
eBook: 978-1-003-10444-5

\* For full contents and more information, visit: [www.routledge.com/9780367610920](http://www.routledge.com/9780367610920)



## Introduction to Microcontroller Programming for Power Electronics Control Applications

Coding with MATLAB® and Simulink®

**Mattia Rossi**, Politecnico di Milano, Italy., **Nicola Toscani**, Politecnico di Milano, Italy., **Marco Mauri**, Politecnico di Milano, Italy. and **Francesco Castelli Dezza**, Politecnico di Milano, Italy.

This book focuses on the LaunchPad™ F28069M board from Texas Instruments™ to provide readers some basic programming strategies specified to the field of power electronics-based control applications. Starting from simple examples such as turning on/off on-board leds or to manage a Pulse-Width-Modulation peripheral, it discusses the settings of all these Simulink® blocks enabled for code translation. The book is oriented to graduate students of electrical and automation and control engineering pursuing a curriculum in power electronics and drives, and to engineers and researchers who want to acquire new competences in the design and implementations of control schemes.

CRC Press

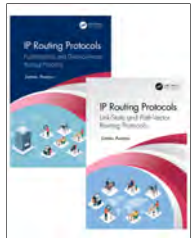
**Market:** Electrical Engineering  
September 2021: 6.14 x 9.21: 448pp  
Hb: 978-0-367-70985-3: **£89.99**  
eBook: 978-1-003-19693-8

\* For full contents and more information, visit: [www.routledge.com/9780367709853](http://www.routledge.com/9780367709853)



## IP Routing Protocols

Two-Volume Set



**James Aweya**

This two-volume book describes the most common IP routing protocols used today, explaining the underlying concepts of each protocol and how the protocol components and processes fit within the typical router. Unlike other books, this title is not vendor focused. Volume 1 discusses fundamental concepts of IP routing and distance-vector routing protocols (RIPv2 and EIGRP). Volume 2 focuses on link-state routing protocols (OSPF and IS-IS) and the only path-vector routing protocol in use today (BGP). The volumes' simple style to make them comprehensible and appealing to undergraduate and graduate level students,

research and practicing engineers, scientists, IT personnel, and network engineers.

CRC Press

**Market:** Computer Engineering  
May 2021: 6.14 x 9.21: 768pp  
Hb: 978-0-367-71040-8: **£205.00**  
Pb: 978-0-367-70959-4: **£84.99**  
eBook: 978-1-003-14903-3

\* For full contents and more information, visit: [www.routledge.com/9780367710408](http://www.routledge.com/9780367710408)

## Mean-Field-Type Games for Engineers



**Julian Barreiro-Gomez**, New York University, UAE. and **Hamidou Tembine**, New York University, UAE.

This book comprises an appropriate background to work and do research on mean-field-type control and game theory. It starts with studying the deterministic optimal control and differential linear-quadratic games, and progressively moves to analyzing mean-field-type control and game problems incorporating several stochastic processes. For the mean-field-type game analysis, several numerical examples using a MatLab-based user-friendly toolbox are available for the readers. It includes applications in both continuous and discrete time, such as water distribution systems, micro-grid energy storage, stirred tank reactor, and COVID-19 propagation control.

CRC Press

**Market:** Engineering - Electrical  
November 2021: 6.14 x 9.21: 528pp  
Hb: 978-0-367-56612-8: **£94.99**  
eBook: 978-1-003-09860-7

\* For full contents and more information, visit: [www.routledge.com/9780367566128](http://www.routledge.com/9780367566128)



## Metaheuristics for Resource Deployment under Uncertainty in Complex Systems

**Shuxin Ding**, **Chen Chen**, **Qi Zhang**, **Bin Xin** and **Panos M. Pardalos**, Center for Applied Optimization, Uni. of FL

This book analyzes how to set locations for the deployment of resources to incur the best performance at the lowest cost. Resources can be static nodes and moving nodes while services for a specific area or for customers can be provided. Theories of modeling and solution techniques are used with uncertainty taken into account and real-world applications used. This book will benefit researchers, professionals, academics, and graduate students in related areas to better understand the theory and application of resource deployment problems and theories of uncertainty, including problem formulations, assumptions, and solution methods.

CRC Press

**Market:** Complex System, Deployment of Resource, Control and System  
August 2021: 6.14 x 9.21: 208pp  
Hb: 978-1-032-06520-5: **£74.99**

eBook: 978-1-003-20265-3

\* For full contents and more information, visit: [www.routledge.com/9781032065205](http://www.routledge.com/9781032065205)

## Metamaterials

Technology and Applications



Edited by **Pankaj K. Choudhury**

This book is comprised of chapters on the topics pivoted to metamaterials, i.e., the artificially engineered mediums/structures, of micro- and nano-scale sizes. These will include novel applications of metamaterials in sensors, solar-cell designs, diffractive lenses, perfect absorbers, phase-shifters, THz imaging, antennas, etc. Apart from these, the use of such mediums in designing certain vacuum tubes will also be incorporated. All these topics remain of great interest in the current technological point of view. The book is expected to be useful to graduate students, expert scientist and R&D scientists in many industries.

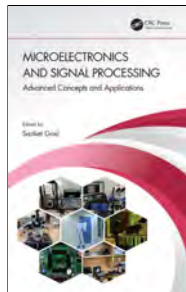
CRC Press

**Market:** Electrical Engineering  
November 2021: 6.14 x 9.21: 464pp  
Hb: 978-0-367-50508-0: **£130.00**  
eBook: 978-1-003-05016-2

\* For full contents and more information, visit: [www.routledge.com/9780367505080](http://www.routledge.com/9780367505080)

## Microelectronics and Signal Processing

Advanced Concepts and Applications



Edited by **Sanket Goel**

This book is a link between the electronics and cutting-edge technologies that are being used for numerous applications representing the physical and virtual developments of electronic devices. Therefore, this book will mostly uphold the innovation and originality involved in the development of miniaturized devices, and proposing new methods, emphasizing with different areas of electrical and electronics engineering. The book will become a benchmark to the readers to understand the academic aspect of the contemporary work and the way forward on how this will lead to help the society-at-large.

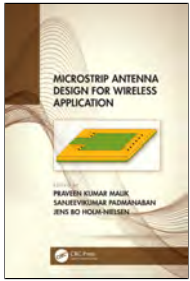
CRC Press

**Market:** Electrical Engineering  
June 2021: 6.14 x 9.21: 282pp  
Hb: 978-0-367-64012-5: **£110.00**  
eBook: 978-1-003-16822-5

\* For full contents and more information, visit: [www.routledge.com/9780367640125](http://www.routledge.com/9780367640125)



## Microstrip Antenna Design for Wireless Applications



Edited by **Praveen Kumar Malik**, Lovely Professional University, India., **Sanjeevikumar Padmanaban**, Department of Energy Technology, Aalborg University, Esbjerg, Denmark, and **Jens Bo Holm-Nielsen**, Aalborg University, Denmark

The book focuses on recent advances in the field of Microstrip antenna design and its applications in various fields including Space communication, Mobile communication, wireless communication, medical implants, wearable applications etc. Scholars from Electronics/ Electrical/ Instrumentation Engineering, researchers and industrial person will benefit from this book. The book shall provide the literature using which students and researchers would design antennas for above mentioned applications. Ultimately, it will enable users to take

measurements in different environments.

CRC Press

**Market:** Electrical Engineering

September 2021: 6.14 x 9.21: 356pp

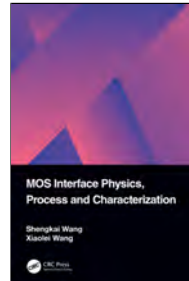
Hb: 978-0-367-55438-5: **£110.00**

eBook: 978-1-003-09355-8

\* For full contents and more information, visit: [www.routledge.com/9780367554385](http://www.routledge.com/9780367554385)



## MOS Interface Physics, Process and Characterization



**Shengkai Wang** and **Xiaolei Wang**

The electronic device based on Metal Oxide Semiconductor (MOS) structure is the most important component of a large-scale integrated circuit, and is therefore a fundamental building block of the information society. Indeed, high quality MOS structure is the key to achieving high performance devices and integrated circuits. Meanwhile, the control of interface physics, process and characterization methods determine the quality of MOS structure. This book contains abundant experimental examples focusing on MOS structure. The volume will be an essential reference for academics and postgraduates within the field of microelectronics.

CRC Press

**Market:** MOS, Microelectronics Engineering, Semiconductor

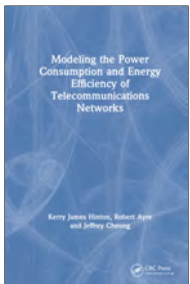
October 2021: 6 x 9: 200pp

Hb: 978-1-032-10627-4: **£74.99**

eBook: 978-1-003-21628-5

\* For full contents and more information, visit: [www.routledge.com/9781032106274](http://www.routledge.com/9781032106274)

## Modeling the Power Consumption and Energy Efficiency of Telecommunications Networks



**Kerry James Hinton**, The University of Melbourne, Australia, **Robert Ayre**, The University of Melbourne, Australia and **Jeffrey Cheong**, University of Melbourne, New South Wales, Australia

This book introduces the technical foundations and tools for estimating the power consumption of telecommunications equipment, networks and services including their construction and application. Pitched at a level that will include a technical level required by students and technologists through to a more generalist level typical of a technology manager and policy maker, the same can be integrated into a course on sustainability of networks. It can be used to construct mathematical models that will provide realistic estimates of telecommunications

network and services for the purposes of forecasting network power consumption and integrating sustainability in network planning and design.

CRC Press

**Market:** Telecommunications

October 2021: 7 x 10: 356pp

Hb: 978-0-367-25441-4: **£140.00**

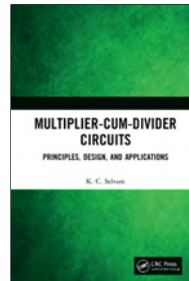
eBook: 978-0-429-28781-7

\* For full contents and more information, visit: [www.routledge.com/9780367254414](http://www.routledge.com/9780367254414)



## Multiplier-Cum-Divider Circuits

Principles, Design, and Applications



**KC Selvam**, Indian Institute of Technology Madras, India

Discussing various types of multiplier-cum-divider circuits, ways to measure electric power and power factor consumed, this text will be useful for senior undergraduate, graduate students, and professional in the fields of electrical engineering, and electronics and communication engineering.

CRC Press

**Market:** Electrical and Electronics Engineering

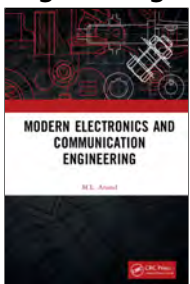
July 2021: 6.14 x 9.21: 232pp

Hb: 978-0-367-75446-4: **£110.00**

eBook: 978-1-003-16851-5

\* For full contents and more information, visit: [www.routledge.com/9780367754464](http://www.routledge.com/9780367754464)

## Modern Electronics and Communication Engineering



**M.L. Anand**

This is the book, in which the subject matter is dealt from elementary to the advance level in a unique manner. Three outstanding features can be claimed for the book viz. (i) style; the student, while going through the pages would feel as if he is attending a class room. (ii) language: that an average student can follow and (iii) approach: it takes the student from "known to unknown" and "simple to complex." The book is reader friendly, thought provoking and stimulating. The style is lucid and un-adulterated. Unnecessary mathematics has been avoided. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

**Market:** Electronics Engineering

October 2021: 6.14 x 9.21: 516pp

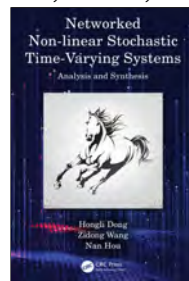
Hb: 978-1-032-12088-1: **£140.00**

eBook: 978-1-003-22297-2

\* For full contents and more information, visit: [www.routledge.com/9781032120881](http://www.routledge.com/9781032120881)

## Networked Non-linear Stochastic Time-Varying Systems

Analysis and Synthesis



**Hongli Dong**, Northeast Petroleum University, China., **Zidong Wang**, Brunel University, London, United Kingdom, and **Nan Hou**, Northeast Petroleum University, China.

This book copes with the filter design, fault estimation and reliable control problems for different classes of nonlinear stochastic time-varying systems with network-enhanced complexities. Divided into three parts, first one discusses the finite-horizon filtering, fault estimation and reliable control, and randomly occurring nonlinearities/uncertainties followed by designing of distributed state and fault estimators, and distributed filters. Third part includes problems of variance-constrained  $H_\infty$  state estimation, partial-nodes-based state estimation and recursive filtering for nonlinear time-varying complex networks with randomly varying topologies, random coupling strengths.

CRC Press

**Market:** Systems and Controls

September 2021: 6.14 x 9.21: 280pp

Hb: 978-1-032-03878-0: **£120.00**

eBook: 978-1-003-18949-7

\* For full contents and more information, visit: [www.routledge.com/9781032038780](http://www.routledge.com/9781032038780)

## Neuromorphic Engineering

The Scientist's, Algorithms Designer's and Computer Architect's Perspectives on Brain-Inspired Computing

Elishai Ezra Tsur

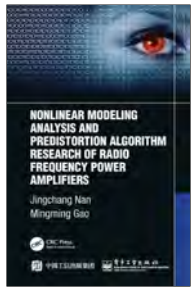
This book will cover the fundamentals of neuromorphic engineering, focusing on the digital neuron model for neuro-synaptic cores, cognitive programming paradigms and algorithms, neuromorphic circuits and applications for networks of neuro-synaptic cores. This book is designed for graduate students in the fields of computer science, electrical engineering, neuroscience and computational biology.

CRC Press

**Market:** Computer Engineering  
August 2021: 6.14 x 9.21: 328pp  
Hb: 978-0-367-67680-3: **£100.00**  
eBook: 978-1-003-14349-9

\* For full contents and more information, visit: [www.routledge.com/9780367676803](http://www.routledge.com/9780367676803)

## Nonlinear Modeling Analysis and Predistortion Algorithm Research of Radio Frequency Power Amplifiers



Jingchang Nan and Mingming Gao

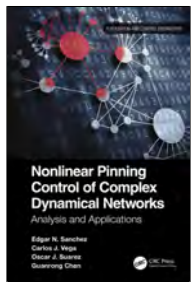
This book is a summary of a series of achievements made by the authors and colleagues in the areas of radio frequency power amplifier modeling (including neural Volterra series modeling, neural network modeling, X-parameter modeling), nonlinear analysis methods, and power amplifier predistortion technology over the past 10 years. Blending theory with analysis, this book will provide researchers and RF/microwave engineering students with a valuable resource.

CRC Press

**Market:** RF circuit and system, Signal processing, Microwave technology  
July 2021: 6 x 9: 378pp  
Hb: 978-1-032-01026-7: **£74.99**  
eBook: 978-1-003-17685-5

\* For full contents and more information, visit: [www.routledge.com/9781032010267](http://www.routledge.com/9781032010267)

## Nonlinear Pinning Control of Complex Dynamical Networks



Edgar N. Sanchez, CINVESTAV, Unidad Guadalajara, Mexico., Carlos J. Vega, Univ of Naples Federico, Italy., Oscar J. Suarez, Ministerio de Ciencia Tecnologia e Innovacion, Colombia. and Guanrong Chen, City Univ, Hong Kong.

*Series: Automation and Control Engineering*

The book presents two nonlinear control strategies for complex dynamical networks. First, sliding-mode control is used, and then the inverse optimal control approach is employed. It covers analysis of the mathematical preliminaries, with a brief review for complex networks, and the pinning methodology.

Additionally, sliding-mode control and inverse optimal control are introduced. It also presents the analysis and simulation results

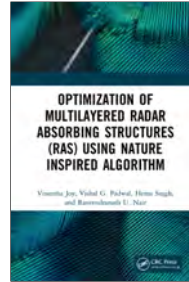
for sliding-mode control with identical or non-identical nodes. The book includes applications of these schemes, which are performed using gene regulatory networks and microgrids as examples.

CRC Press

**Market:** Engineering - Electrical  
August 2021: 6.14 x 9.21: 228pp  
Hb: 978-1-032-02087-7: **£140.00**  
eBook: 978-1-003-18180-4

\* For full contents and more information, visit: [www.routledge.com/9781032020877](http://www.routledge.com/9781032020877)

## Optimization of Multilayered Radar Absorbing Structures (RAS) using Nature Inspired Algorithm



Vineetha Joy, CSIR-NAL, Kodihalli, Bangalore, India, Vishal G. Padwal, CSIR-NAL, Bangalore, India, Hema Singh, CSIR-NAL, Bangalore, India and Raveendranath U. Nair, CSIR-NAL, Kodihalli, Bangalore, India

With respect to multi-layered radar absorbing structures (RAS), this book presents an efficient algorithm, based on particle swarm optimization (PSO), for the material selection as well as optimization of thickness of multi-layered RAS models considering both normal as well as oblique incidence cases. It includes a thorough overview of the theoretical background required for the analysis of multi-layered RAS as well as the step-by-step procedure for the implementation of PSO based algorithm. The accuracy and computational efficiency of the

indigenously developed code is also clearly established using relevant validations and case studies.

CRC Press

**Market:** Electromagnetics, RF & Microwaves  
July 2021: 6.14 x 9.21: 86pp  
Hb: 978-0-367-75912-4: **£74.99**  
eBook: 978-1-003-16456-2

\* For full contents and more information, visit: [www.routledge.com/9780367759124](http://www.routledge.com/9780367759124)

## Planar Antennas

Design and Applications

Edited by Praveen Kumar Malik, Lovely Professional University, Jalandhar, India

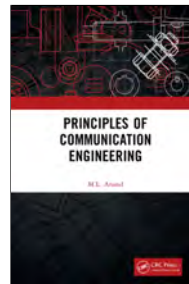
This comprehensive reference text discusses fundamental concepts, applications, design techniques, and challenges in the field of planar antennas. It focuses on recent advances in the field of planar antenna design and their applications in various fields of research including space communication, mobile communication, wireless communication, and wearable applications. It presents planar antenna design concepts, methods, and techniques to enhance the performance parameters, and applications for IoTs and device-to-device communication. The latest techniques used for the design of antennas in terms of their structures defected ground, MIMO, and fractal design is discussed comprehensively.

CRC Press

**Market:** Electrical and Electronics Engineering  
October 2021: 6.14 x 9.21: 344pp  
Hb: 978-1-032-03446-1: **£110.00**  
eBook: 978-1-003-18732-5

\* For full contents and more information, visit: [www.routledge.com/9781032034461](http://www.routledge.com/9781032034461)

## Principles of Communication Engineering



M.L. Anand

This is the book, in which the subject matter is dealt from elementary to the advance level in a unique manner. Three outstanding features can be claimed for the book viz. (i) style; the student, while going through the pages would feel as if he is attending a class room. (ii) language: that an average student can follow and (iii) approach: it takes the student from "known to unknown" and "simple to complex." The book is reader friendly, thought provoking and stimulating. The style is lucid and un-adulterated. Unnecessary mathematics has been avoided. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

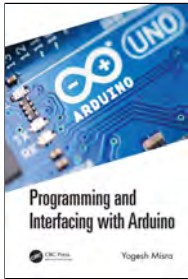
CRC Press

**Market:** Electronics Engineering  
October 2021: 6.14 x 9.21: 646pp  
Hb: 978-1-032-11944-1: **£140.00**  
eBook: 978-1-003-22227-9

\* For full contents and more information, visit: [www.routledge.com/9781032119441](http://www.routledge.com/9781032119441)



## Programming and Interfacing with Arduino



Yogesh Misra, GMR Institute of Technology, India

Discussing construction, working, programming and interfacing of IO devices (LED, switch, LCD display, seven segment display, key pad matrix) with Arduino board, this text will be useful for senior undergraduate students, and professionals in areas such as electrical engineering, electronics and communication engineering. It covers construction, working, programming and interfacing of relay with Arduino board for controlling high voltage devices, and interfacing diagram of devices with Arduino board.

CRC Press

Market: Electrical and Electronics Engineering

September 2021: 6.14 x 9.21: 280pp

Hb: 978-1-032-05985-3: £170.00

Pb: 978-1-032-06316-4: £46.99

eBook: 978-1-003-20170-0

\* For full contents and more information, visit: [www.routledge.com/9781032059853](http://www.routledge.com/9781032059853)



2nd Edition

## Radiation Detection Systems

Two Volume Set

Edited by Jan Iwanczyk, DxRay Inc., USA, and Krzysztof Iniewski, Emerging Technologies CMOS Inc., British Columbia, Canada

Series: *Devices, Circuits, and Systems*

This second edition of the book presents the state-of-the-art in the design of detectors and integrated circuit design, in the context of medical imaging using ionizing radiation. The book has been divided into two volumes. The first volume on Sensor Materials, Systems, Technology and Characterization Measurements puts more emphasis on sensor materials, detector and front electronics technology and designs as well as system optimization for different applications. The second volume on Medical Imaging, Industrial Testing and Security Applications is devoted to more specific applications of detection systems in medical imaging, industrial testing and security applications.

CRC Press

Market: Engineering - Electrical

November 2021: 6.14 x 9.21: 704pp

Hb: 978-1-032-06955-5: £180.00

eBook: 978-1-003-21944-6

\* For full contents and more information, visit: [www.routledge.com/9781032069555](http://www.routledge.com/9781032069555)

## Recursive Filtering for 2-D Shift-Varying Systems with Communication Constraints



Jinling Liang, School of Mathematics, Southeast University, Zidong Wang, Brunel University, London, United Kingdom, and Fan Wang, Southeast University, Nanjing, China.

This book presents up-to-date research developments and novel methodologies regarding recursive filtering for 2-D shift-varying systems with various communication constraints. It investigates recursive filter/estimator design and performance analysis by a combination of intensive stochastic analysis, recursive Riccati-like equations, and mathematical induction. Each chapter considers dynamics of the system, subtle design of filter gains, and effects of the communication constraints on filtering performance. Effectiveness of the derived theories and applicability of the developed filtering strategies are illustrated via simulation

examples and practical insight.

CRC Press

Market: Systems and Control

September 2021: 6.14 x 9.21: 248pp

Hb: 978-1-032-03817-9: £120.00

eBook: 978-1-003-18921-3

\* For full contents and more information, visit: [www.routledge.com/9781032038179](http://www.routledge.com/9781032038179)

## Robot Learning Human Skills and Intelligent Control Design



Chenguang Yang, Bristol Robotics Laboratory (BRL), University of the West of England (UWE), Bristol, Chao Zeng, University of Hamburg, Germany and Jianwei Zhang, Institute of Technical Aspects of Multimodal Systems, University of Hamburg, Germany

The book introduces recent results on the development of advanced LfD-based learning and control approaches to improve the robot dexterous manipulation. It explains the transfer of human user's arm variable stiffness to the robot, based on the online estimation from the muscle electromyography. It introduces the correlation between signals collected from demonstration, i.e. motion trajectory, stiffness profile estimated from EMG and interaction force. Some common human-robot interaction interfaces (like motion capture-based teleoperation) are presented, which allow a human user to interact with a robot and transfer movements to it in both simulation and real-world environments.

CRC Press

Market: Robotics

June 2021: 6.14 x 9.21: 190pp

Hb: 978-0-367-63436-0: £110.00

eBook: 978-1-003-11917-3

\* For full contents and more information, visit: [www.routledge.com/9780367634360](http://www.routledge.com/9780367634360)

## Simulation Method of Multipactor and Its Application in Satellite Microwave Components



Wanzhao Cui, Yun Li, Hongtai Zhang and Jing Yang

Series: *Space Science, Technology and Application Series*

This book combines the experience and achievements in engineering practice of the China Academy of Space Technology, Xi'an, with a focus on the field of high-power multipactor over recent decades. It introduces the main concepts, theories, methods and latest technologies of multipactor simulation, at both the theoretical and as a process of engineering, while providing a comprehensive introduction to the outstanding progress made in the research technology of multipactor numerical simulation in China. At the same time, the three-dimensional numerical simulation method of multipactor for typical high-power microwave components of spacecraft is

introduced.

CRC Press

Market: High-power multipactor, high-power microwave, spacecraft

September 2021: 6 x 9: 236pp

Hb: 978-1-032-03897-1: £74.99

eBook: 978-1-003-18979-4

\* For full contents and more information, visit: [www.routledge.com/9781032038971](http://www.routledge.com/9781032038971)

## Skin-Close Computing and Wearable Technology

Andrews Samraj, Mahendra Engineering College, Tamil Nadu, India

This book explains the concept of wearable computing, need for wearable technology, its advantages, applications, state of art developments, required material and technology, and possible future applications. The scope encompasses three major components, wearable computing (next generation conventional computing, ergonomics), wearable technology (medical support, rehabilitation engineering) and allied technologies (miniature components, cyber physical systems, robotics). This book is aimed at senior undergraduate, graduate students and researchers in computer and biomedical engineering, bioinstrumentation, biosensors, and assistive technology.

CRC Press

Market: Ergonomics

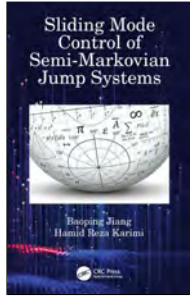
November 2021: 6.14 x 9.21: 200pp

Hb: 978-0-367-51216-3: £100.00

eBook: 978-1-003-05290-6

\* For full contents and more information, visit: [www.routledge.com/9780367512163](http://www.routledge.com/9780367512163)

## Sliding Mode Control of Semi-Markovian Jump Systems



Edited by **Baoping Jiang**, Suzhou University of Science and Technology, Electronic and Information Engineering, Suzhou, China and **Hamid Reza Karimi**, Politecnico di Milano, Department of Mechanical Engineering, Milan, Italy

This book presents analysis and design for a class of stochastic systems with semi-Markovian jump parameters. It explores systematic analysis of semi-Markovian jump systems via sliding mode control strategy which makes up the shortages in the analysis and design of stochastic systems. This text provides a novel estimation method to deal with the stochastic stability of semi-Markovian jump systems along with design of novel integral sliding surface. Finally, Takagi-Sugeno fuzzy model approach is brought to deal with system nonlinearities and fuzzy

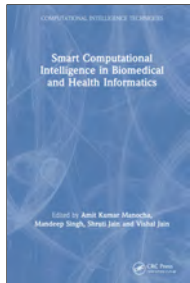
sliding mode control laws are provided to ensure the stabilization purpose.

CRC Press

**Market:** Systems and Controls  
August 2021: 6.14 x 9.21: 174pp  
Hb: 978-0-367-56503-9: **£120.00**  
eBook: 978-1-003-09804-1

\* For full contents and more information, visit: [www.routledge.com/9780367565039](http://www.routledge.com/9780367565039)

## Smart Computational Intelligence in Biomedical and Health Informatics



Edited by **Amit Kumar Manocha**, Maharaja Ranjit Singh Punjab Technical University, Bathinda, India, **Mandeep Singh**, Thapar Institute of Engineering and Technology, Patiala, India, **Shrutai Jain**, Jaypee Uni. of Information Tech., H.P, India and **Vishal Jain**, Bharati Vidyapeeth's Inst. of Comp. Appl. and Mgmt, India

*Series: Computational Intelligence Techniques*

Smart Computational Intelligence in Biomedical and Health Informatics presents state-of-art innovations, research, design and implementation of methodological and algorithmic solutions to data processing problems, designing, and analysing evolving trends in health informatics and computer-aided

diagnosis. Further, it describes practical, applications-led research on the use of methods and devices in clinical diagnosis, disease prevention, patient monitoring and management.

CRC Press

**Market:** Biomedical Engineering  
September 2021: 6.14 x 9.21: 208pp  
Hb: 978-0-367-62412-5: **£110.00**  
eBook: 978-1-003-10932-7

\* For full contents and more information, visit: [www.routledge.com/9780367624125](http://www.routledge.com/9780367624125)

## Soft Computing Approach for Mathematical Modeling of Engineering Problems

Edited by **Ali Ahmadian** and **Soheil Salahshour**

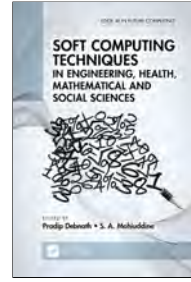
This book describes the use of different mathematical modeling and soft computing techniques used to solve real world engineering problems. The book gives an overview of the current state of soft computing techniques and describes the advantages and disadvantages of soft computing compared to traditional hard computing techniques. This book is intended for system specialists who are interested in dynamic systems that operate at different time scales. The book can be used by engineering students, researchers and professionals in control and finite element fields as well as all engineering, applied mathematics, economics, and computer science interested in dynamic and uncertain systems.

CRC Press

**Market:** Computer Engineering  
September 2021: 6.14 x 9.21: 224pp  
Hb: 978-0-367-68599-7: **£100.00**  
eBook: 978-1-003-13834-1

\* For full contents and more information, visit: [www.routledge.com/9780367685997](http://www.routledge.com/9780367685997)

## Soft Computing Techniques in Engineering, Health, Mathematical and Social Sciences



Edited by **Pradipt Debnath** and **S. A. Mohiuddine**

*Series: Edge AI in Future Computing*

The book contains theory and applications of soft computing in engineering, health, social and applied sciences. Different soft computing techniques such as artificial neural networks, fuzzy systems, evolutionary algorithms and hybrid systems are discussed. It also contains important chapters in machine learning and clustering. This book is meant for graduate students, faculty and researchers willing to expand their knowledge in any branch of soft computing. The readers of this book will require minimum prerequisites of undergraduate studies in computation and mathematics.

CRC Press

**Market:** Computer Engineering  
July 2021: 6.14 x 9.21: 232pp  
Hb: 978-0-367-75068-8: **£89.99**  
eBook: 978-1-003-16170-7

\* For full contents and more information, visit: [www.routledge.com/9780367750688](http://www.routledge.com/9780367750688)

## Spectrum Sensing for Cognitive Radio

Fundamentals and Applications



Edited by **Kamal M. Captain**, Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat, India and **Manjunath V. Joshi**, DAICT, India

Discussing fundamental concepts of cognitive radio and spectrum sensing, this text will be useful as a reference text for graduate students and academic researchers in the fields of electrical engineering, electronics and communication engineering and remote sensing. It discusses detection algorithms including ranked square law combining (R-SLC) and ranked square law selection (R-SLS) for wideband spectrum sensing. The text further covers detection algorithm for cooperative wideband spectrum sensing.

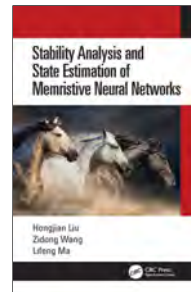
CRC Press

**Market:** Engineering - Electrical  
November 2021: 6.14 x 9.21: 256pp  
Hb: 978-0-367-54293-1: **£89.99**  
eBook: 978-1-003-08855-4

\* For full contents and more information, visit: [www.routledge.com/9780367542931](http://www.routledge.com/9780367542931)



## Stability Analysis and State Estimation of Memristive Neural Networks



Edited by **Hongjian Liu**, Anhui Polytechnic University, Wuhu, China., **Zidong Wang**, Brunel University, London, United Kingdom, and **Lifeng Ma**, Nanjing University of Science and Technology, Nanjing, China

The book discusses the stability analysis and estimator design problems for delayed discrete-time memristive neural networks. In each chapter, the analysis problems are firstly considered, where the stability, synchronization and other performances (e.g., robustness, disturbances attenuation level) are investigated within a unified theoretical framework. Then, the estimator design issues are discussed where sufficient conditions are derived to ensure the existence of the desired estimators with guaranteed performances. Finally, the theories and techniques

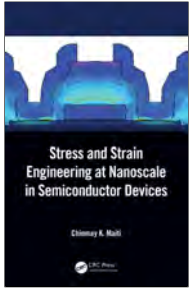
developed in previous parts are applied to deal with some issues in several emerging research areas.

CRC Press

**Market:** Systems and Controls  
August 2021: 6.14 x 9.21: 234pp  
Hb: 978-1-032-03710-3: **£120.00**  
eBook: 978-1-003-18915-2

\* For full contents and more information, visit: [www.routledge.com/9781032037103](http://www.routledge.com/9781032037103)

## Stress and Strain Engineering at Nanoscale in Semiconductor Devices



Chinmay K. Maiti, SOA University Bhubaneswar, Odisha, India

Based on extensive 3D process and device simulations with mechanical stress simulations by finite element techniques, this book explains performance assessment of nanoscale devices with strained SiGe and other stressors. It investigates the possible highest amount of process-induced stress transfer by various stressors for optimization of device performance. Further, it explains new developments at 7nm technology node and below in the area of strain-engineered devices using different material systems such as Silicon, high mobility semiconductors. Overall, material aspects, principle and design aspects of heterostructure devices, TCAD simulations and applications are discussed.

CRC Press

Market: Microelectronics

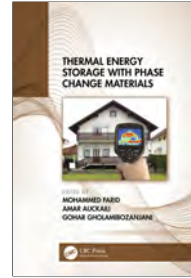
June 2021: 6.14 x 9.21: 274pp

Hb: 978-0-367-51929-2: **£130.00**

eBook: 978-1-003-05572-3

\* For full contents and more information, visit: [www.routledge.com/9780367519292](http://www.routledge.com/9780367519292)

## Thermal Energy Storage with Phase Change Materials



Edited by Mohammed Farid, Amar Auckaili and Gohar Gholamibozanjani

This book focuses on latent heat storage, which is one of the most efficient ways of storing thermal energy. Unlike the sensible heat storage method, latent heat storage method provides much higher storage density, with a smaller difference between storing and releasing temperatures. With six chapters that cover the deep aspects of thermal energy storage and their practical applications, this book is an ideal research reference for students at the postgraduate level. It also serves a useful reference for electrical, mechanical, and chemical engineers and students throughout their work.

CRC Press

Market: Electrical Engineering

July 2021: 6.14 x 9.21: 464pp

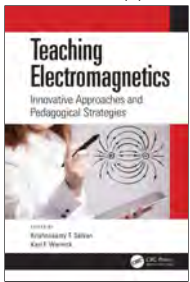
Hb: 978-0-367-55941-0: **£140.00**

eBook: 978-0-367-56769-9

\* For full contents and more information, visit: [www.routledge.com/9780367559410](http://www.routledge.com/9780367559410)

## Teaching Electromagnetics

Innovative Approaches and Pedagogical Strategies



Edited by Krishnasamy T. Selvan and Karl F. Warnick

This book is a modern guide for electromagnetic educators addressing questions about curricular content and pedagogical methods primarily at the undergraduate level. Topics include teaching methods, lab experiences and hands-on learning, and course structures that help teachers respond effectively to trends in learning styles and evolving engineering curricula. The book will grapple with issues related to the recent worldwide shift to remote teaching. The end result should be impact on the reader represented by improvements to his or her practical teaching methods and curricular approach to electromagnetics education. The book is intended for electromagnetic professors and lab instructors.

CRC Press

Market: Electrical Engineering

June 2021: 6.14 x 9.21: 258pp

Hb: 978-0-367-71088-0: **£140.00**

Pb: 978-0-367-71057-6: **£52.99**

eBook: 978-1-003-14923-1

\* For full contents and more information, visit: [www.routledge.com/9780367710880](http://www.routledge.com/9780367710880)

## Unsupervised Learning Approaches for Dimensionality Reduction and Data Visualization

B.K. Tripathy, Vellore Institute of Technology, Vellore, India., Anveshritaa S, Vellore Institute of Technology, India. and Shrusti Ghela, Vellore Institute of Technology, India.

This book describes algorithms like Locally Linear Embedding (LLE), Laplacian eigenmaps, Isomap, Semidefinite Embedding, t-SNE to resolve the problem of dimensionality reduction in the case of non-linear relationships within the data. Underlying mathematical concepts, derivations and proofs with logical explanations for these algorithms are discussed including strengths and the limitations. It highlights important use cases of these algorithms and few examples along with visualizations. Comparative study of algorithms is presented, in order to give clear idea on selecting the best suitable algorithm for a given dataset for efficient dimensionality reduction and data visualization.

CRC Press

Market: Computer Engineering

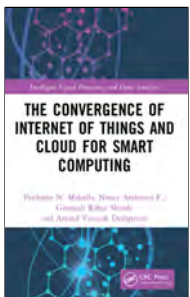
September 2021: 6.14 x 9.21: 174pp

Hb: 978-1-032-04101-8: **£140.00**

eBook: 978-1-003-19055-4

\* For full contents and more information, visit: [www.routledge.com/9781032041018](http://www.routledge.com/9781032041018)

## The Convergence of Internet of Things and Cloud for Smart Computing



Parikshit N. Mahalle, Department of Computer Engineering, Smt Kashibai Navale College of Engineering, Vadgaon(Bk), Pune, INDIA, Nancy Ambritta P., Sinhgad Institutes SPPU, Pune, India., Gitanjali Rahul Shinde, Department of Computer Engineering, STES's, Smt. Kashibai Navale College of Engineering, Pune, India and Arvind Vinayak Deshpande, Sinhgad Institutes SPPU, Pune, India.

Series: *Intelligent Signal Processing and Data Analysis*

This book presents the knowhow of the real-time IoT application development activity. It offers a basic understanding of the IoT architecture, use cases, smart computing and the associated challenges in design and development of the IoT system. All the technical details related to protocol stack, technologies and

platforms used for the implementation are explained. Various aspects pertaining to the IoT-cloud computing platform along with an introduction to the offloading and resource sharing mechanisms are discussed as well. It further introduces techniques and case studies that include smart computing on the IoT cloud models along with test beds for experimentation purposes.

CRC Press

Market: Engineering- Electrical

August 2021: 5.5 x 8.5: 138pp

Hb: 978-1-032-03804-9: **£44.99**

eBook: 978-1-003-18909-1

\* For full contents and more information, visit: [www.routledge.com/9781032038049](http://www.routledge.com/9781032038049)

## User Interface Requirements for Medical Devices

Driving Toward Safe, Effective, and Satisfying Products by Specification  
Michael Wiklund, UL-Wiklund, Concord, Massachusetts, USA, Erin Davis, UL-Wiklund, Concord, Massachusetts, USA and Alexandria Trombley

This book is a practical guide for individuals responsible for creating products that are safe, effective, usable, and satisfying in the hands of the intended users. The contents are intended to reduce the number of use errors involving medical devices that have led to injuries and deaths. The book presents the strong connection between user interface requirements and safety in medical devices and instructs readers how to develop specific requirements that are sufficiently comprehensive and detailed to produce good results – a user-friendly product that is likely to be used correctly.

CRC Press

Market: Biomedical Engineering

November 2021: 6.14 x 9.21: 280pp

Hb: 978-0-367-45793-8: **£150.00**

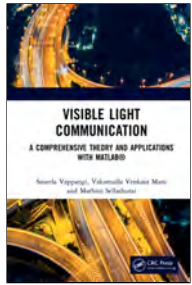
Pb: 978-0-367-45747-1: **£59.99**

eBook: 978-1-003-02971-7

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## Visible Light Communication

A Comprehensive Theory and Applications with MATLAB®



Suseela Vappangi, National Institute of Technology, Warangal, India., Vakamulla Venkata Mani, National Institute of Technology, Warangal, India. and Mathini Sellathurai, Heriot-Watt University, UK

Discussing key aspects of visible light communication such as channel modelling and modulation formats, this textbook introduces theoretical concepts along with diverse applications of visible light communication in a comprehensive manner. The text highlights diverse applications of visible light communication in designing smart cities and vehicular communication. It will be a valuable resource for senior undergraduate and graduate students in the field of electronics and communication engineering.

CRC Press

Market: Electrical Engineering

August 2021: 6.14 x 9.21: 502pp

Hb: 978-0-367-63217-5: £120.00

eBook: 978-1-003-19153-7

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## Artificial Intelligence Applications in a Pandemic

COVID-19

Edited by **Salah-ddine Krit**, Associate Professor, Dept. of Mathematics, Informatics, and Management, Ibn Zohr University, Morocco, **Vijendra Singh, Mohamed Elhoseny**, Mansoura University, Egypt and **Yashbir Singh**

*Series: Smart and Intelligent Computing in Engineering*

AI technologies are playing an important role in the response to the COVID-19 pandemic. This book is a collection of some of the leading efforts related to AI and COVID-19 focused on finding how AI can be helpful in monitoring the situation from early warnings, swift emergency responses, and critical decision-making. It discusses the use of machine learning and how it may help to reduce the impacts of this pandemic in conjunction with all other research and strategies going on. The book will serve academics, students, data scientists, medical practitioners, and anybody managing a global pandemic.

CRC Press

**Market:** Artificial Intelligence / COVID-19

October 2021: 6.14 x 9.21: 168pp

Hb: 978-0-367-64449-9: **£74.99**

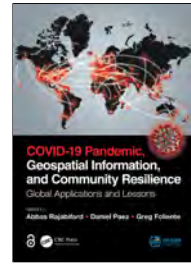
eBook: 978-1-003-12621-8

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## COVID-19 Pandemic, Geospatial Information, and Community Resilience

Global Applications and Lessons



Edited by **Abbas Rajabifard**, University of Melbourne, Australia, **Daniel Paez**, University of Melbourne, Australia and **Greg Foliente**, University of Melbourne, Australia

Geospatial information plays an important role in managing location-dependent pandemic situations across different areas. Geospatial information is particularly critical to strengthening urban and rural resilience, where economic, agricultural, and various social sectors all intersect. Examining the United Nations' SDGs from a geospatial lens will ensure that the challenges are addressed for all populations in different locations. This book, with worldwide contributions focused on the COVID-19 pandemic, provides interdisciplinary analysis and multi-sectoral

expertise on the use of geospatial information and location intelligence to support community resilience the management of pandemics.

CRC Press

**Market:** Geospatial Information

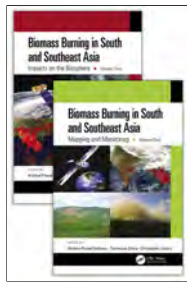
June 2021: 6.85 x 9.69: 558pp

Hb: 978-0-367-77531-5: **£150.00**

eBook: 978-1-003-18159-0

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## Biomass Burning in South and Southeast Asia, Two Volume Set



Edited by **Krishna Prasad Vadrevu**, Univ. Maryland College Park, **Toshimasa Ohara**, National Institute for Environmental Studies, Japan and **Christopher Justice**, Univ. of Maryland

South and Southeast Asian countries are hot spots for fires and biomass burning pollution with impacts on other countries through trans-boundary air pollution. Despite the growing body of information on biomass burning pollutants worldwide, only a modest amount of data from these regions are available. To better serve the atmospheric, environmental, and remote sensing communities, and to address air quality, climate, and health impacts of pollutants from biomass burning, this book brings together the collective achievements of experts in these regions and the state-of-the-art technologies and spatial analyses to

model and monitor biomass burning events and their impacts.

CRC Press

**Market:** Environmental Science

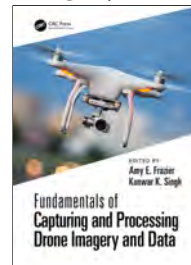
June 2021: 6.14 x 9.21: 660pp

Hb: 978-0-367-07516-3: **£190.00**

eBook: 978-0-429-02122-0

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## Fundamentals of Capturing and Processing Drone Imagery and Data



Edited by **Amy E. Frazier** and **Kunwar K. Singh**

Unmanned Aircraft Systems are rapidly emerging as flexible platforms for capturing imagery and other data across sciences. Many colleges and universities are developing courses on UAS-based data acquisition. This book is a comprehensive, introductory text on how to use unmanned aircraft systems for data capture and analysis. It provides best practices for planning data capture missions and hands-on learning modules geared toward UAS data collection, processing, and applications. Readers will learn how to process different types of UAS imagery for applications such as Precision Agriculture, Forestry, Urban Landscapes, and apply this knowledge in environmental

monitoring and land-use studies.

CRC Press

**Market:** Environmental Science

July 2021: 6.85 x 9.69: 385pp

Hb: 978-0-367-24572-6: **£90.00**

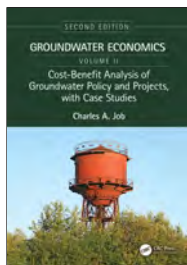
eBook: 978-0-429-28323-9

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2nd Edition

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Groundwater Economics, Volume 2



**Charles A. Job**, U.S. Environmental Protection Agency, Montgomery Village, Maryland, USA

*Series: Groundwater Economics, Second Edition, Two-Volume Set*

The competition for groundwater sources as a water supply reinforces the need for a strong economic rationale in decision-making. Evaluating economic decisions in the context of total water management and life-cycle water use is essential to making critical development and remediation choices. This revised volume provides fundamental economic and policy concepts related to groundwater, discusses important factors in cost-benefits and life-cycle evaluation, and explains

triple-bottom-line analysis for different groundwater projects. It includes new and updated case studies on groundwater issues with solutions for a range of situations based on economic data.

CRC Press

**Market:** Water Science and Engineering

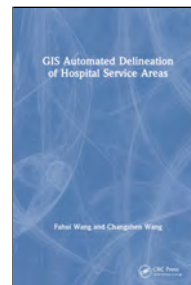
July 2021: 7 x 10: 403pp

Hb: 978-0-367-20551-5: **£120.00**

eBook: 978-0-429-26220-3

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## GIS Automated Delineation of Hospital Service Areas



**Fahui Wang**, Louisiana State University, Baton Rouge, USA and **Changzhen Wang**

This book intends to mainly serve professionals in geography, urban and regional planning, public health, and related fields. It is also useful for scholars in the above fields who have research interests related to GIS and spatial analysis applications in health care. It can be used as a supplemental text for graduate students in a course related to GIS and Health.

CRC Press

**Market:** Environmental Science

October 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-20228-6: **£85.00**

eBook: 978-0-429-26028-5

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2nd Edition

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Charles A. Job, U.S. Environmental Protection Agency, Montgomery Village, Maryland, USA

The second edition is a comprehensive work focused on the economic values of groundwater resources and use, and reinforces the need for a strong economic rationale in decision-making. New in this edition is a full chapter on sustainability. All chapters have been updated to include sustainable management of water resources at all levels. The book provides fundamental economic and policy concepts related to groundwater, discusses important factors in cost-benefits and life-cycle evaluation for different groundwater projects. Through a series of case studies, readers will find economic solutions for a wide range of groundwater issues.

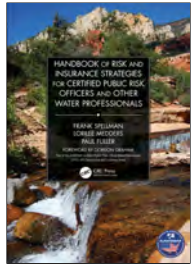
CRC Press

**Market:** Water Science and Engineering

July 2021: 7 x 10: 838pp

Hb: 978-0-367-20631-4: £190.00

eBook: 978-1-003-16408-1

\* For full contents and more information, visit: [www.routledge.com/9780367206314](http://www.routledge.com/9780367206314)**Handbook of Risk and Insurance Strategies for Certified Public Risk Officers and other Water Professionals**

Frank Spellman, Spellman Environmental Consultants, Norfolk, Virginia, USA, Lorilee Medders and Paul Fuller

*Handbook of Risk and Insurance Strategies for Certified Public Risk Officers and other Water Professionals* combines practical knowledge of technical water/wastewater operations along with the core subjects of risk management and insurance for practicing and aspiring professionals charged with handling these vital tasks for their organizations. Readers will also gain invaluable perspective and knowledge on best-in-class risk management and insurance practices in the water and wastewater industries.

CRC Press

**Market:** Environmental Engineering

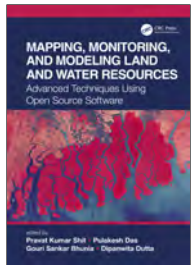
October 2021: 7 x 10: 936pp

Hb: 978-1-032-07207-4: £150.00

eBook: 978-1-003-20714-6

\* For full contents and more information, visit: [www.routledge.com/9781032072074](http://www.routledge.com/9781032072074)**Mapping, Monitoring, and Modeling Land and Water Resources**

Advanced Techniques Using Open Source Software



Edited by Pravat Kumar Shit, Vidyasagar University, Midnapore, India, Pulakesh Das, Senior Project Associate, Balbir Saxena Marg, Hauz Khas, India, Gouri Sankar Bhunia, Gorachand Bhunia, Paschim Medinipur, India and Dipanwita Dutta, Vidyasagar Uni., India

The wide range of challenges in studying Earth system dynamics due to uncertainties in climate change and man-made interference are causing problems in managing the sustainable use of land and water resources. This book brings together real-world case studies accurately surveyed and assessed through spatial modeling and focuses on the effectiveness of combining remote sensing, GIS, and R. The use of open source software for different

spatial modeling cases in various fields, along with the use of remote sensing and GIS, helps researchers, students, and practitioners to better understand the phenomena and the prediction of future analyses for problem solving and decision making.

CRC Press

**Market:** Environmental Studies

June 2021: 7 x 10: 348pp

Hb: 978-0-367-48683-9: £100.00

eBook: 978-1-003-18129-3

\* For full contents and more information, visit: [www.routledge.com/9780367486839](http://www.routledge.com/9780367486839)**Modeling Invasive Alien Plant Species**

Fuzzy-Based Uncertainty



H.O.W. Peiris, S. Chakraverty, S.S.N. Perera and S.M.W. Ranwala

*Modelling Invasive Alien Plant Species: Fuzzy Based Uncertainty* presents the application of different fuzzy set theory techniques in developing risk assessment models for invasive plant species—those whose introduction and spread outside their natural range threatens local biodiversity. Invasion risk of species is expressed by biological traits which would be considered as the risk factors accompanied with uncertainty and imprecision. The book considers both quantitative and qualitative inputs in modelling the invasive risk by incorporating different mathematical models based on fuzzy set theory operators, interval methods, and fuzzy linguistic operators.

CRC Press

**Market:** Environmental Engineering

August 2021: 6.14 x 9.21: 208pp

Hb: 978-0-367-75809-7: £89.99

eBook: 978-1-003-19380-7

\* For full contents and more information, visit: [www.routledge.com/9780367758097](http://www.routledge.com/9780367758097)**Multidimensional Approaches to Impacts of Changing Environment on Human Health**

Edited by Joystu Dutta, Sant Gahira Guru Univ., India, Srijan Goswami, Indian School of Complementary Therapy & Allied Sciences and Abhijit Mitra, Univ. of Calcutta, Kolkata, India

The book discusses the indispensable connection between the environment and health via all possible aspects, focussing on human interactions with the environment. The multi-dimensional field of environmental and human health perspectives with emerging issues and current trends is illustrated through supporting case studies, reviews, research reports and examples. Aimed at graduate students and researchers in environmental and medical sciences, health and safety, and ecology.

CRC Press

**Market:** Environmental Health

September 2021: 6 x 9: 452pp

Hb: 978-0-367-55849-9: £140.00

eBook: 978-1-003-09542-2

\* For full contents and more information, visit: [www.routledge.com/9780367558499](http://www.routledge.com/9780367558499)**Nitrate Handbook**

Environmental, Agricultural, and Health Effects

Edited by Christos Tsadilas, Hellenic Agricultural Organization DEMETER, Institute of Soil Mapping and Classification, Greece

*Series: Advances in Trace Elements in the Environment*

The *Nitrate Handbook* provides an overview of the entire nitrate cycle and the processes influencing nitrate transformation. It clearly identifies the role of nitrate as an essential nutrient in plant growth, food preservation, and human health. Using the most up-to-date knowledge and research, it illustrates how the steadily increasing human population and demand for food, which results in higher amounts of nitrate needed by soils, makes new regulations on the management and usage of nitrates a high priority. All questions pertaining to the influences of nitrate and its derivatives on plant physiology and human health are explored in depth.

CRC Press

**Market:** Environmental Science

November 2021: 6.14 x 9.21: 448pp

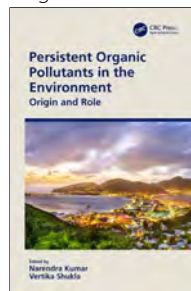
Hb: 978-0-367-33822-0: £140.00

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## Persistent Organic Pollutants in the Environment

Origin and Role



Edited by **Narendra Kumar**, Department of Environmental Science, Babasaheb Bhimrao (Central) University, India and **Vertika Shukla**, Department of Environmental Science, Babasaheb Bhimrao Ambedkar (Central) University, India

Persistent Organic Pollutants (POPs) are toxic, resistant to degradation, bioaccumulate, and display wide spatial distribution which has been linked to mutagenic, reproductive and immunological disorders. In Stockholm Convention, a global treaty was agreed and envisaged to minimize and ultimately eliminate the release of POPs into the environment. The present compilation regarding POPs focusses on the sources, atmospheric behaviour, terrestrial and aquatic food chain transfer, human exposure and fate aspects of this important

class of chemicals including topical issues like temporal trends in contamination. Furthermore, chemical characteristics of individual POPs is also addressed.

CRC Press

**Market:** Environmental Studies

September 2021: 6.14 x 9.21: 392pp

Hb: 978-0-367-51288-0: **£120.00**

eBook: 978-1-003-05317-0

\* For full contents and more information, visit: [www.routledge.com/9780367512880](http://www.routledge.com/9780367512880)

## Pesticides, Organic Contaminants, and Pathogens in Air

Chemodynamics, Health Effects, Sampling and Analysis

**James N. Seiber** and **Thomas Cahill**

This book summarizes and places in perspective the potential transport, transformation, and health implications of pesticides and other organic contaminants in air, including in the air we breathe. It is a great resource for understanding pesticides in air and it is written by global experts in air contaminant research.

CRC Press

**Market:** Air Pollution

October 2021: 6.14 x 9.21: 256pp

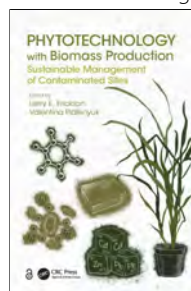
Hb: 978-0-367-48567-2: **£100.00**

eBook: 978-1-003-21760-2

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## Phytotechnology with Biomass Production

Sustainable Management of Contaminated Sites



Edited by **Larry E. Erickson**, Kansas State University, Manhattan, USA and **Valentina Pidlisnyuk**

This book explains the concept of using phytotechnology with biomass production to improve soil quality and produce valuable products that have economic and social value. It is focused on the application of second generation biofuel crops to slightly contaminated or marginal post-military and post-mining soils. Based on recent research from the US, Ukraine, Germany, and Poland, along with studies from other countries, this is the first comprehensive book on using phytotechnology with biomass production at contaminated sites at a global level. It's also a great new resource for those who want to study and plan phytotechnology projects as well as those who carry them out.

CRC Press

**Market:** Environmental Studies

June 2021: 6.14 x 9.21: 242pp

Hb: 978-0-367-52280-3: **£110.00**

eBook: 978-1-003-08261-3

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## Plant-Microbial Interactions and Smart Agricultural Biotechnology

Edited by **Swati Tyagi**, **Robin Kumar**, **Baljeet Saharan** and **Ashok Kumar Nadda**

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Considering the ever-increasing global population and finite arable land, technology and sustainable agricultural practices are required to improve crop yield. This book examines the interaction between plants and microbes and considers the use of advanced techniques such as genetic engineering, revolutionary gene editing technologies, and their applications to understand how plants and microbes help or harm each other at the molecular level. Understanding plant-microbe interactions and related gene editing technologies will provide new possibilities for sustainable agriculture.

CRC Press

**Market:** Environmental Engineering

September 2021: 6.14 x 9.21: 320pp

Hb: 978-1-032-10041-8: **£89.99**

eBook: 978-1-003-21386-4

\* For full contents and more information, visit: [www.routledge.com/9781032100418](http://www.routledge.com/9781032100418)

## Practicing Circular Economy



**Prasad Modak**, Environmental Management Centre LLP, Mumbai, Maharashtra, India

Circular Economy (CE) is considered as one the important strategies to address the Sustainable Development Goals.

*Practicing Circular Economy* provides an overview of CE, covering its evolution describing the key concepts, programs, policies and regulations. It illustrates several business opportunities over a hundred hand-picked case studies that encompass numerous sectors, various scales of operations and geographies. *Practicing Circular Economy* is thus an important resource for every circular economy practitioner and especially to those who aspire to make a career in circular economy.

CRC Press

**Market:** Environmental Studies

June 2021: 6.14 x 9.21: 396pp

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Pb: 978-0-367-61957-2: **£44.00**

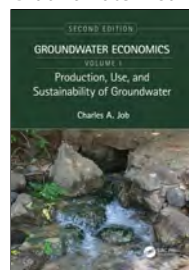
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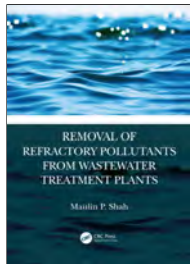
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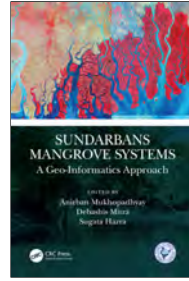
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A Geo-Informatics Approach



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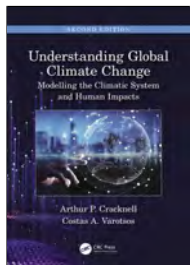
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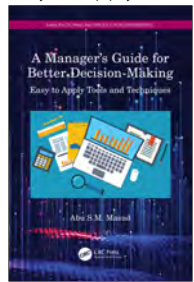
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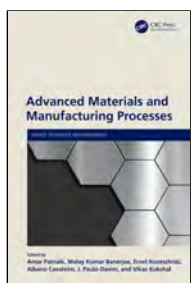
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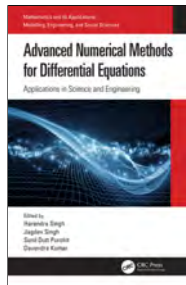
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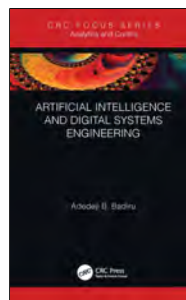
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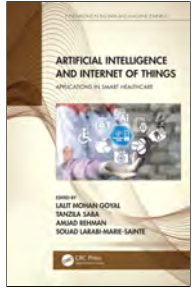
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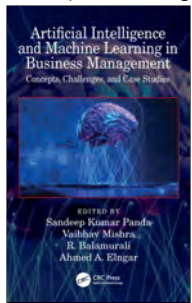
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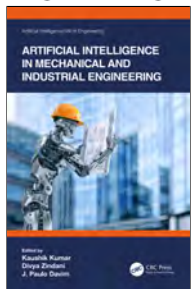
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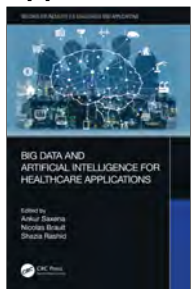
July 2021: 6.14 x 9.21: 316pp

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## Concise Introduction to Logic and Set Theory

**Iqbal H. Jebri**, Associate Professor, Department of Mathematics, Taibah University, **Hemen Dutta**, Department of Mathematics, Gauhati University and **Ilwoo Cho**, Saint Ambrose University, Iowa

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This book deals with two important branches of mathematics, namely, logic and set theory. Logic and set theory are closely related and play very crucial roles in the foundation of mathematics, and together produce several results in all of mathematics.; The topics of logic and set theory are required in many areas of physical sciences, engineering, and technology. The book offers solved examples and exercises, and provides reasonable details to each topic discussed, for easy understanding.

CRC Press

**Market:** Engineering-Industrial & Manufacturing

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## Convergence of Blockchain Technology and E-Business

Concepts, Applications, and Case Studies



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The book examines blockchain technology, the transaction attributes, and its footprint in various fields. It offers fundamentals and terminologies used in blockchain, architecture, and various consensus mechanisms that can be deployed in areas such as healthcare, smart cities, and supply chain management. The book provides a widespread knowledge into the deployment of security countermeasures that can be implemented for a blockchain network and enables the readers to consider the management of business processes and the implementation process in detail. The book highlights the challenges and provides various e-business case studies of security countermeasures.

CRC Press

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July 2021: 6.14 x 9.21: 290pp

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## Cyber-Physical, IoT, and Autonomous Systems in Industry 4.0

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This book addresses topics related to Internet of Things (IoT), Machine Learning, Cyber-Physical Systems, Cloud Computing and Autonomous Vehicles for Industry 4.0. It investigates challenges across multiple sectors, industries and considers Industry 4.0 for operations research and supply chain management. *Cyber-Physical, IoT, and Autonomous Systems in Industry 4.0* encourages readers to develop novel theories and enrich their knowledge to foster sustainability. It examines the recent research trends and the future of Cyber-Physical systems, IoT, and Autonomous Systems as it relates to Industry 4.0.

CRC Press

**Market:** Engineering - Industrial & Manufacturing

October 2021: 6.14 x 9.21: 416pp

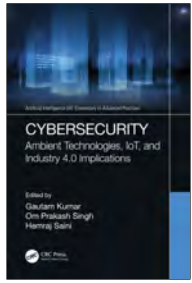
Hb: 978-0-367-70515-2: **£140.00**

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CRC Press

**Market:** Engineering: Industrial and Manufacturing

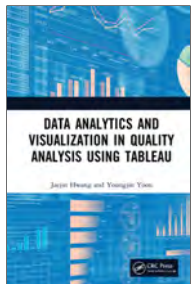
September 2021: 6.14 x 9.21: 224pp

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## Data Analytics and Visualization in Quality Analysis using Tableau



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The purpose of this book is to help quality practitioners perform effective quality control and analysis using Tableau software, a user-friendly data analytics and visualization software. It initiates with basic introduction to quality analysis with Tableau including differentiating factors from other platforms. It is followed by description of features and functions of quality analysis tools followed by step-by-step instructions to use Tableau. Further, quality analysis through Tableau based on open source data is explained based on five case studies. Lastly, it systematically describes the implementation of the quality analysis through Tableau in actual workplace via a dashboard example.

Tableau in actual workplace via a dashboard example.

CRC Press

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This book not only focuses on the practical applications of data science to achieve computational excellence, but also digs deep into the issues and implications of intelligent systems. This book will be useful for the research community, start-up entrepreneurs, academicians, and data centered industries and professors that are interested in exploring innovations in varied applications and areas of data science.

CRC Press

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CRC Press

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Pb: 978-0-367-76745-7: **£44.99**

eBook: 978-1-003-16840-9

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This book is a detailed reference on biomedical applications using Deep Learning. Because Deep Learning is an important actor shaping the future of Artificial Intelligence, its specific and innovative solutions for both medical and biomedical are very critical. This book starts with essentials and moves toward deeper and advanced topics.

The specific and innovative solutions covered in this book for both medical and biomedical applications are critical to scientists, researchers, practitioners, professionals, and educators who are working in the context of the topics.

CRC Press

**Market:** Engineering - Industrial & Manufacturing

July 2021: 6.14 x 9.21: 364pp

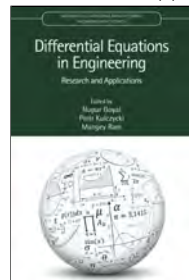
Hb: 978-0-367-42250-9: **£120.00**

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CRC Press

**Market:** Engineering: Industrial and Manufacturing

September 2021: 6.14 x 9.21: 220pp

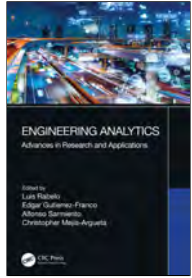
Hb: 978-0-367-61312-9: **£120.00**

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## Engineering Analytics

Advances in Research and Applications



Edited by **Luis Rabelo**, University of Central Florida, **Edgar Gutierrez-Franco**, University of Central Florida, **Alfonso Sarmiento**, Universidad de La Sabana and **Christopher Mejía-Argueta**

This book is intended to be an introduction to Engineering Analytics that can be used to improve performance tracking, customer segmentation for resource optimization, patterns and classification strategies, and logistics control towers. Basic methods in the areas of visual, descriptive, predictive, and prescriptive analytics and Big Data are introduced. Industrial case studies and example problem demonstrations are used throughout the book to reinforce the concepts and applications.

The book goes on to cover visual analytics and its relationships,

simulation from the respective dimensions and Machine Learning and Artificial Intelligence from different paradigms viewpoints.

CRC Press

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September 2021: 6.14 x 9.21: 312pp

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## Entrepreneurship and Big Data

The Digital Revolution

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*Series: Big Data for Industry 4.0*

This book is a comprehensive and analytical source on entrepreneurship and big data that prospective entrepreneurs must know before embarking upon an entrepreneurial journey in this present age of digital transformation. The book provides an overview of the various aspects of entrepreneurship, function, and contemporary forms. It covers a real-world understanding of how the entrepreneurial world works and the required new analytics thinking and computational skills. The book also encompasses the essential elements needed when starting an entrepreneurial journal and offers inspirational case studies from key industry leaders.

CRC Press

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Hb: 978-0-367-47673-1: **£140.00**

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## Ergodesign Methodology for Product Design

A Human-Centered Approach

**Marcelo M. Soares**, Federal Univ. of Pernambuco, Brazil

This book offers a user-centered design methodology that allows the reader to carry out analysis and design projects for both products aimed at the disabled user population and those that serve the general population. It will be a valuable text for graduate students, and professionals in the fields of ergonomics, human factors, industrial engineering, and manufacturing engineering. It will be an ideal reference text for graduate students, and professionals in the fields of ergonomics, human factors, industrial, and manufacturing engineering.

CRC Press

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September 2021: 6.14 x 9.21: 224pp

Hb: 978-1-032-05448-3: **£90.00**

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Maintaining the Balance

**Ian Long**, Raede Consulting, Australia

Discussing grand unified theory of safety using set of individual characteristics, distinctions, attributes or traits that can permeate through the workforce at all levels, this text will be useful as a reference text for students, researchers and professionals in the fields of ergonomics, human factors, industrial engineering, occupational health and safety. CRC Press

**Market:** Occupational Health and Safety

September 2021: 6.14 x 9.21: 262pp

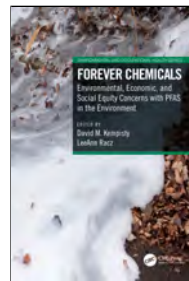
Hb: 978-0-367-75436-5: **£68.99**

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The book offers the educated reader both a broad overview of PFAS and a deeper understanding of specific PFAS issues. Without requiring an advanced degree, the reader will have knowledge of the big rocks that are associated with PFAS. Policy makers will appreciate the difficulties and pros and cons of new analytical methods and the difficulties of PFAS detection in various environmental media. Concerned citizens from the general public will be exposed to risk management thought

strategies.

CRC Press

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July 2021: 6.14 x 9.21: 360pp

Hb: 978-0-367-45640-5: **£100.00**

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This book is on capacity building in strategic and non-strategic machine tool technology. It includes machine building in sectors such as machine tools, automobiles, home appliances, energy, and biomedical engineering along with case studies. The book offers guidelines for capacity building in academia on how to promote enterprises of functional reverse engineering. It discusses machine tool development, engineering design, prototyping of strategic and non-strategies machine tools, as well as presenting communication strategies, IoT, along with case studies.

CRC Press

**Market:** Engineering-Industrial & Manufacturing

June 2021: 6.14 x 9.21: 304pp

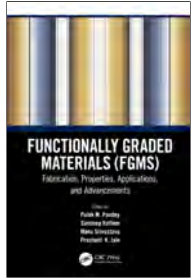
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Fabrication, Properties, Applications, and Advancements



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The book covers trends, process classification on various basis, physical processes involved, structure, properties, applications, advantages, and limitations. Emerging trends in the field are discussed in detail and advancements are thoroughly reviewed and presented to broaden the spectrum of FGM applications. This reference book will be of interest to scholars, researchers, academicians, industry practitioners, government labs, libraries and anyone interested in the area of Materials Engineering.

CRC Press

**Market:** Engineering: Industrial and Manufacturing

September 2021: 6.14 x 9.21: 254pp

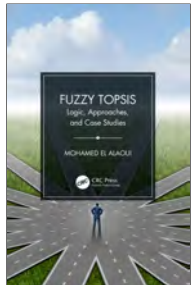
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**Mohamed El Alaoui**

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CRC Press

**Market:** Engineering - Industrial and Manufacturing Engineering

May 2021: 6.14 x 9.21: 216pp

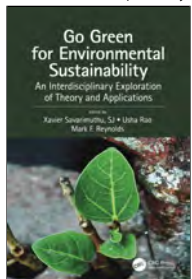
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CRC Press

**Market:** Engineering - Industrial and Manufacturing

July 2021: 6.14 x 9.21: 276pp

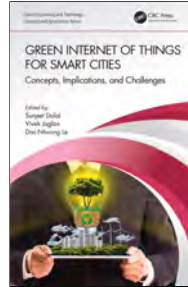
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*Series: Green Engineering and Technology*

The bright future of green IoT will change our tomorrow environment to become healthier and green, with very high quality of service that is socially, environmentally, and economically sustainable. This book covers the most recent advances in IoT, it discusses Smart City implementation, and offers both quantitative and qualitative research. This book with its wide range of related topics in IoT and Smart City, will be useful for graduate students, researchers, academicians, institutions, and professionals that are interested in exploring the areas of IoT and Smart City.

CRC Press

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June 2021: 6.14 x 9.21: 316pp

Hb: 978-0-367-85853-7: **£130.00**

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The book will discuss and explore green engineering technologies for smart cities, covers various engineering disciplines and environmental science, emphasizes techniques, application frameworks, tools, and case studies. It plays a part in the evolution of sustainable green smart cities, and presents how to solve environmental issues by applying modern industrial

IoT solutions.

CRC Press

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CRC Press

**Market:** Engineering: Industrial and Manufacturing

October 2021: 6.14 x 9.21: 312pp

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advantageous working conditions to enhance individual performance, the handbook suggests ways to expand opportunities for global economic and ergonomic development.

CRC Press

**Market:** General Engineering

June 2021: 7 x 10: 774pp

Hb: 978-1-466-59452-4: **£190.00**

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CRC Press

**Market:** Ergonomics & Human Factors

September 2021: 6.14 x 9.21: 640pp

Hb: 978-0-367-35768-9: **£190.00**

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CRC Press

**Market:** Ergonomics & Human Factors

January 2021: 234x156: 180pp

Hb: 978-1-472-47144-4: **£115.00**

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**Ken Parsons**, Emeritus Professor, Loughborough University, Leicestershire, UK

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CRC Press

**Market:** Engineering: Ergonomics and Human Factors

July 2021: 5.5 x 8.5: 158pp

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Developing a Vehicle Automation Assistant



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CRC Press

**Market:** Ergonomics and Human Factors

October 2021: 6.14 x 9.21: 216pp

Hb: 978-1-032-10161-3: **£89.99**

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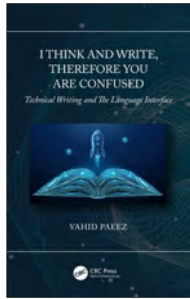
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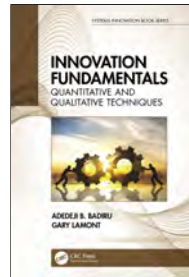
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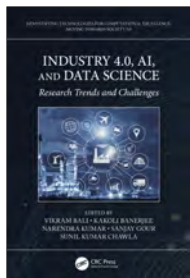
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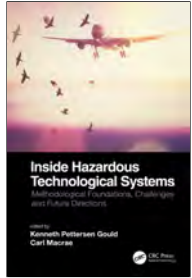
This book offers case studies on real problems involving higher education, it includes policies that need to be adaptable to the new environments such as the role of accreditation, online learning, MOOCs, and mobile-based learning. The book covers all aspects of the digital competencies of teachers to fulfill the required needs of 21st-century classrooms and uses a new pedagogical approach suitable for educational policies. This book is suitable for teachers, students, instructional and course designers, policymakers, and anyone interested in 21st-century education.

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There currently is no in-depth book dedicated to the challenge of the Internet of Everything and Big Data Technologies in Smart-Cities. The world today is confronting a critical worldwide portability challenge and the framework that moves cities must keep pace with the innovation. The book is written for analysts researchers, and specialists who are working in the future generation of the technologies. It will serve as a valuable guide for industry people, and students as well.

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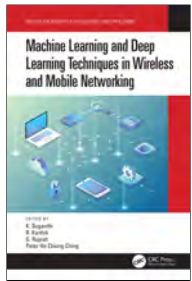
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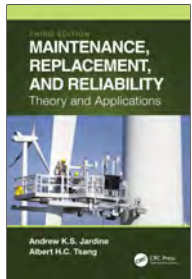
communication systems and its underlying technologies, research challenges, solutions, and case studies. It provides information on intelligent wireless communication systems and its models, algorithms and applications.

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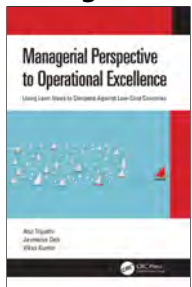
Since the publication of the second edition in 2013, there have been an increasing interest in asset management globally as evidenced by a series of international standards on asset management systems, to achieve excellence in asset management. This can not be achieved without high quality data and the tools for data interpretation. The importance of such requirements is widely recognized by industry. This new edition textbook can be used by undergraduate or post graduate courses on physical asset management. Problem sets with answers are provided at the end of each chapter, and additional

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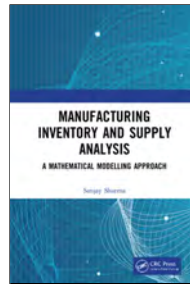
done these days in the field. 3D printing, sustainable machining, micro-manufacturing, robotics, smart materials, operations and supply chain management, lean and green manufacturing are majorly focused.

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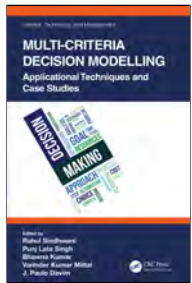
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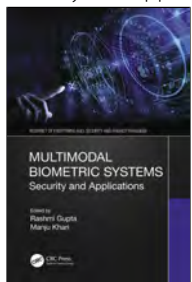
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Hb: 978-1-032-04413-2: £70.00

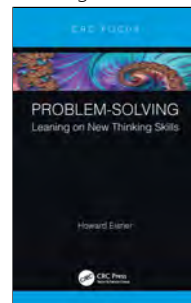
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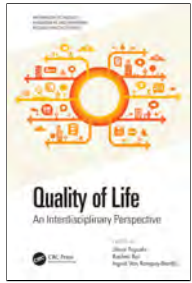
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**Market:** Engineering: Industrial & Manufacturing

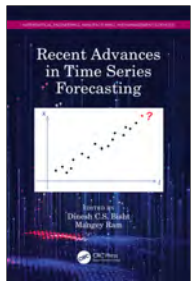
August 2021: 6.14 x 9.21: 236pp

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The objective of this book is to support readers facing the urgency, challenges, analysis, and methodologies to reconfiguration. It presents a comprehensive framework for reconfiguring in manufacturing enterprises and provides a set of valuable conceptual frameworks and methodologies for analyzing, evaluating, and assessing reconfiguration indices. This book offers practical guidance for implementing the 4th Industrial Revolution (Industry 4.0). It presents open-ended problems pertaining to the concepts covered in the book. This book covers a new approach for reconfiguring industrial systems.

CRC Press

**Market:** Engineering-Industrial & Manufacturing

August 2021: 6.14 x 9.21: 204pp

Hb: 978-0-367-19090-3: **£120.00**

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CRC Press

**Market:** Engineering - Industrial & Manufacturing

August 2021: 6.14 x 9.21: 142pp

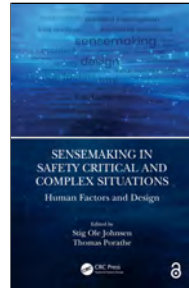
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Human Factors and Design



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Human Factors-based design that supports the strengths and weaknesses of humans are often missed during the concept and design of complex technical systems. This book describes how Human Factors and Sensemaking can be used as part of the concept and design of safety critical systems, in order to improve safety and resilience. The book is for human factors and ergonomists, safety engineers, designers involved in safety critical work, and students.

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July 2021: 6.14 x 9.21: 292pp

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CRC Press

**Market:** Ergonomics & Human Factors

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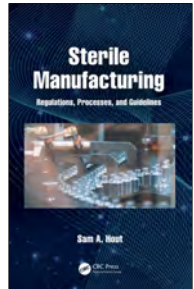
CRC Press

**Market:** Engineering: Industrial and Manufacturing  
October 2021: 6.14 x 9.21: 264pp  
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## Sterile Manufacturing

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**Sam A. Hout**

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CRC Press

**Market:** Engineering - Industrial and Manufacturing  
July 2021: 6.14 x 9.21: 206pp  
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The book will help the industry to raise operational efficiency by reducing costs and waste. It will increase industry respond or reach new customers and increase competitive advantage. It offers innovation, scenario planning, and strategic analysis that goes beyond compliance, as well as case studies and remedies to industry 4.0 challenges.

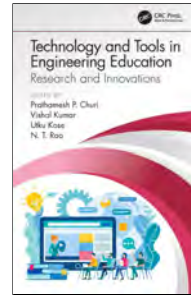
CRC Press

**Market:** Engineering - Industrial and Manufacturing  
October 2021: 6.14 x 9.21: 248pp  
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This book explores the innovative and research methods of teaching and learning processes. It focuses on the use of technology in the field of education and provides a platform to academicians and educationalists to share their ideas and best practices. The book includes specific pedagogy used in engineering education. It offers case studies and classroom practices which also includes those used in distance mode and during the COVID-19 pandemic. It provides comparisons of national and international accreditation bodies, directions on cost effective technology, and discusses advanced technologies such as VR and augmented reality used in education.

CRC Press

**Market:** Engineering: Industrial and Manufacturing  
October 2021: 6.14 x 9.21: 256pp  
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## Textile Engineering

Statistical Techniques, Design of Experiments and Stochastic Modeling

**Anindya Ghosh**, Government College of Engineering and Textile Technology, India, **Bapi Saha**, Government College of Engineering and Textile Technology, Berhampore, West Bengal, India and **Prithwiraj Mal**, National Institute of Fashion Technology, Hyderabad, India

Focusing on the importance of application of statistical techniques, design of experiments and stochastic modeling in textile engineering, this book endeavours to cover all these areas in one book. Practical examples and end-of-chapter exercises selected from textile industry are included. In order to solve various numerical problems relevant to statistics, design of experiment and stochastic modeling, computer codes in MATLAB® are provided at the end of each chapter for better comprehension. Overall theme of the book is analysis and interpretation of the textile data for improving the quality of textile process and product using various statistical techniques.

CRC Press

**Market:** Textile manufacturing  
October 2021: 6.14 x 9.21: 504pp  
Hb: 978-0-367-53274-1: **£150.00**  
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CRC Press

**Market:** Engineering - Industrial & Manufacturing  
October 2021: 6.14 x 9.21: 360pp  
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## Advanced Materials and Technologies for Wastewater Treatment



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This book discusses advanced materials and technologies used in wastewater treatment. It includes the treatment of waste generated by municipal, agro-industry, and other industries including chemical, biomedical, pharmaceutical, textile, and other sectors. This concise reference is aimed at chemical and environmental engineers and researchers seeking a thorough treatment of innovative water treatment materials and techniques for practical applications.

CRC Press

**Market:** Chemical and Environmental Engineering  
 September 2021: 6.14 x 9.21: 400pp  
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The book serves as an ideal reference for academic researchers and engineers working with natural renewable materials, biorefining of lignocellulose, and biofuels. It can also be used as a comprehensive reference source for university students in metabolic, chemical, and environmental engineering.

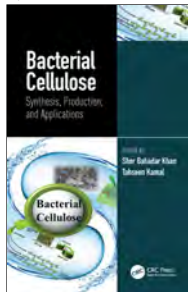
CRC Press

**Market:** Chemical Engineering/Environmental Engineering  
 October 2021: 6.14 x 9.21: 408pp  
 Hb: 978-0-367-74554-4: **£140.00**  
 eBook: 978-1-003-15848-6

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Bacterial cellulose (BC) is a natural polymer with unique structural, physico-chemical, mechanical, thermal, and biological properties offer much potential for use in diverse applications in the biomedical, electronics, energy, and environmental fields, among others. This text provides an overview of the synthesis, characterization, modification, and application of BC. This book will be of great interest to researchers and industry professionals in materials science, chemical engineering, chemistry, and other related fields seeking to learn about the synthesis and application of this important material.

CRC Press

**Market:** Materials Science/Chemical Engineering  
 September 2021: 6.14 x 9.21: 256pp  
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## Biomaterials and Materials for Medicine

Innovations in Research, Devices, and Applications

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Series: *Emerging Materials and Technologies*

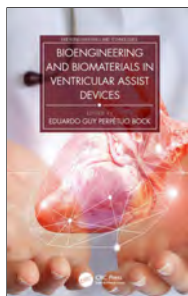
Biomaterials and Materials for Medicine offers an application-oriented summary of innovations in this rapidly evolving field, offering a view of various directions in biomaterials and medical materials and their advanced uses. This book is aimed at an interdisciplinary group of researchers working on development and application of biomaterials for medical applications in the fields of materials scientists, biomedical engineering, and medicine.

CRC Press

**Market:** Materials Science/Biomedical Engineering  
 September 2021: 6.14 x 9.21: 382pp  
 Hb: 978-0-367-75321-4: **£140.00**  
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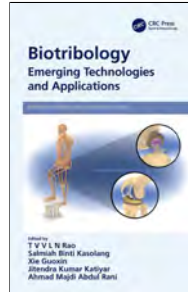
CRC Press

**Market:** Biomedical Engineering/Materials Science  
 October 2021: 6.14 x 9.21: 392pp  
 Hb: 978-0-367-68632-1: **£120.00**  
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## Biotribology

Emerging Technologies and Applications



Edited by **TVVL N Rao**, **Salmiah Binti Kasolang**, **Xie Guoxin**, **Jitendra Kumar Katiyar**, SRM Institute of Science and Technology, Kancheepuram, Tamilnadu, India and **Ahmad Majdi Abdul Rani**

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Biotribology includes tribological phenomena of natural and implant surface interactions under relative motion in the human body. This book disseminates ideas and research trends in biotribology and presents pioneering recent research advances impacting the field, focusing on the role of mathematics, chemistry, physics, materials, and mechanical engineering. Biotribology is an important and growing field, and topics covered in the book will be of great interest to the international

tribology community, appealing to readers working in the fields of materials science, biomedical engineering, biotechnology, mechanical engineering, and related areas.

CRC Press

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## Chemical Nanofluids in Enhanced Oil Recovery

Fundamentals and Applications

Rahul Saha, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India, Pankaj Tiwari, IIT Guwahati, India and Ramgopal V.S. Uppaluri, Indian Institute of Technology Guwahati, India

Presenting important chemical nanofluid techniques in enhanced oil recovery, this text will be a valuable reference for graduate students and academic researchers in the fields of chemical engineering and petroleum engineering. It discusses limitations, case studies and laboratory experiments in enhanced oil recovery. The text highlights the synergy of chemical and nanofluid methods for enhanced oil recovery applications. It covers fundamental concepts of tertiary chemical enhanced oil recovery and key surfactant adsorption characteristics of reservoir rock.

CRC Press

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## Composite and Composite Coatings

Mechanical and Tribology Aspects

Edited by Mohamed Thariq Hameed Sultan, Universiti Putra Malaysia, Selangor, Malaysia, S. Arulvel, School of Mechanical Engineering, Vellore Institute of Technology, Vellore, India and K. Jayakrishna, Vellore Institute of Technology, Vellore, India

Applications of composite materials and composite coatings have been increasing in the field of automobile and aerospace industries due to the versatility in their properties. Present book comprehensively reviews the composite materials and coatings with a focus on the mechanical and tribology applications. It covers types of fibres (natural and synthetic), reinforcements and their selection, matrix, and technologies used to produce composite materials. Various sections cover basics and associated failures of composites, strengthening mechanisms and background theories, composite manufacturing technologies, mechanical and tribology properties of past and currently used composites.

CRC Press

Market: Composites

November 2021: 6.14 x 9.21: 296pp

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Perspectives on Advancing the Industry



Edited by Probir Guha

This book provides a panoramic view of innovations in the composites industry. The book is arranged in five segments including: how composites fit into our world, the basics of the technology, customer insights, discussions from outside the world of composites, and paths forward to find competitive and effective solutions in a timely manner. The work is a resource for composites business leaders, researchers, and industry professionals to pioneer new solutions with composite materials.

CRC Press

Market: Materials Science/Mechanical Engineering

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## Computational Technologies in Materials Science



Edited by Shubham Tayal, Parveen Singla, Ashutosh Nandi and J. Paulo Davim, Univ. of Aveiro

Series: *Science, Technology, and Management*

This book encourages materials researchers and academics to develop novel theories and sustainable computational techniques and explores the potential for computational intelligence to replace traditional materials research.

CRC Press

Market: Materials Science and Engineering

October 2021: 6.14 x 9.21: 240pp

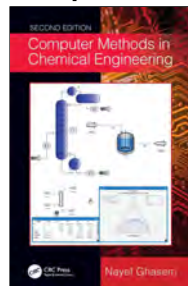
Hb: 978-0-367-64057-6: £90.00

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Nayef Ghasem, United Arab Emirates University, Al-Ain

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CRC Press

Market: Engineering - Chemical

November 2021: 6.14 x 9.21: 522pp

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Sharon Lam Po Tang

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The book starts by helping the reader understand what advanced wound care is and the market size. It then explains how different types of wounds may require different environments to heal and how dressings can help in creating the right environment. It gives an overview of the various dressing technologies that are available to help manage wounds that are difficult to heal. It provides recent clinical evidence that support how well (or not) the technologies work, and also discusses on how such technologies are launched in the market. Finally, the book will highlight the current trends that may be directing the future of the advanced wound dressing sector.

CRC Press

Market: Materials Science

July 2021: 6.14 x 9.21: 254pp

Hb: 978-0-367-20443-3: £150.00

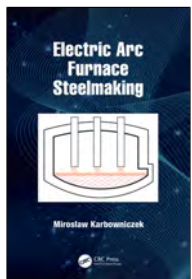
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## Electric Arc Furnace Steelmaking



Mirosław Karbowiczek, AGH University of Science and Technology, Krakow, Poland

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and industrial tests.

CRC Press

Market: Metals and Alloys

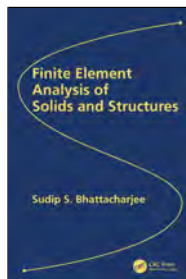
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## Finite Element Analysis of Solids and Structures



Sudip S. Bhattacharjee

This textbook combines the theory of elasticity (advanced analytical treatment of stress analysis problems) and finite element methods (numerical details of finite element formulations) into one academic course derived from author's teaching, research, and applied work in automotive product development as well as in civil structural analysis. This work contains 12 discrete chapters that can be covered in a single semester university graduate course on linear elastic finite element analysis methods. The book also serves as a reference for practicing engineers working on design assessment and analysis of solids and structures.

CRC Press

Market: Mechanical Engineering/Materials

July 2021: 6.14 x 9.21: 340pp

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## Energy Storage and Conversion Devices

Supercapacitors, Batteries, and Hydroelectric Cells



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CRC Press

Market: Materials and Chemical Engineering

October 2021: 6.14 x 9.21: 208pp

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Ying-Jie Zhu

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traditional paper.

CRC Press

Market: Materials Science/Materials Chemistry

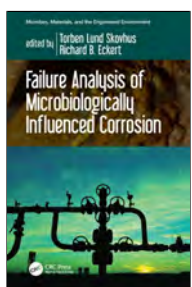
August 2021: 6.14 x 9.21: 276pp

Hb: 978-0-367-70005-8: £140.00

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\* For full contents and more information, visit: [www.routledge.com/9780367700058](http://www.routledge.com/9780367700058)

## Failure Analysis of Microbiologically Influenced Corrosion



Edited by Richard B. Eckert and Torben Lund Skovhus, VIA University College, Denmark

Series: *Microbes, Materials, and the Engineered Environment*

The book serves as a complete guide to corrosion failure analysis with emphasis on diagnosis of MIC. It provides background information on the forensic process, types of data or evidence needed to perform the analysis, industrial case studies, details on the MIC failure analysis process, and protocols for field and lab use. By applying the principles of chemistry, microbiology, and metallurgy, readers will be able to reliably determine the mechanistic cause of corrosion damage and failures and select appropriate methods for mitigating future corrosion incidents.

CRC Press

Market: Corrosion Engineering

November 2021: 6.14 x 9.21: 524pp

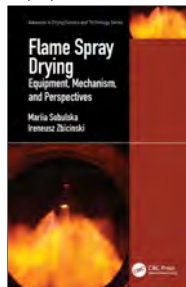
Hb: 978-0-367-35680-4: £130.00

eBook: 978-0-429-35547-9

\* For full contents and more information, visit: [www.routledge.com/9780367356804](http://www.routledge.com/9780367356804)

## Flame Spray Drying

Equipment, Mechanism, and Perspectives



Mariia Sobulska and Ireneusz Zbicinski

Series: *Advances in Drying Science and Technology*

This book describes flame spray drying technology and current developments in flame techniques and evaluates potential industrial implementation. It explains an important new technique useful to chemical and process engineering researchers, professionals, and students working with drying technologies.

CRC Press

Market: Chemical Engineering

September 2021: 6.14 x 9.21: 160pp

Hb: 978-0-367-56931-0: £110.00

eBook: 978-1-003-10038-6

\* For full contents and more information, visit: [www.routledge.com/9780367569310](http://www.routledge.com/9780367569310)

## Food Processing

Advances in Thermal and Non-Thermal Technologies, Two Volume Set



Edited by **Kshirod Kumar Dash**, Department of Food Engineering and Technology, Tezpur University, Tezpur, Assam, India and **Sourav Chakraborty**, Department of Food Engineering and Technology, Tezpur University, Tezpur, Assam, India

Advances in thermal and non-thermal food processing aims to discuss emerging trends based on the future scope and challenges and to explain uncertain challenges in food processing. In thermal processing different operations in food engineering namely advance drying methods, evaporation, extrusion cooking, different extraction techniques, crystallizations are covered in terms food engineering and process modeling aspect. For non-thermal processing, high pressure processing, ultrasound, ohmic heating, pulse electric field, pulse light technology, osmotic dehydration and so forth are discussed. Relevant mathematical modeling and numerical simulations has been included in every chapter.

CRC Press

**Market:** Food & Culinary Science

June 2021: 6.14 x 9.21: 568pp

Hb: 978-0-367-75618-5: **£160.00**

eBook: 978-1-003-16325-1

\* For full contents and more information, visit: [www.routledge.com/9780367756185](http://www.routledge.com/9780367756185)

## FRP Composite Structures

Theory, Fundamentals, and Design



Hota V.S. GangaRao, West Virginia University, USA and Woraphot Prachasaree

The focus of this textbook is to develop simplified mathematical models representing the behavior of beams and plates under static loads, after introducing generalized Hooke's Law for materials with different properties, i.e., anisotropic, orthotropic, transversely isotropic, and isotropic properties. Subsequently, the simplified models coupled with design methods including FRP composite material degradation factors are introduced by solving a wide range of practical design problems. This book is aimed at advanced undergraduate and graduate students and industry professionals focused on the analysis and design of FRP composite structural members.

CRC Press

**Market:** Composite Materials/Construction Materials

October 2021: 7 x 10: 584pp

Hb: 978-1-032-05251-9: **£99.99**

eBook: 978-1-003-19675-4

\* For full contents and more information, visit: [www.routledge.com/9781032052519](http://www.routledge.com/9781032052519)

## Functional Thin Films Technology



Edited by **Sam Zhang**, Nanyang Technological University, Singapore, **Jyh-Ming Ting**, National Cheng Kung University, Tainan, Taiwan and **Wan-Yu Wu**

*Series: Advances in Materials Science and Engineering*

This book highlights developments and advances in the preparation, characterization, and applications of functional micro-/nano-scaled films and coatings. This comprehensive work will benefit industry professionals and researchers working in areas related to semiconductor, optoelectronics, plasma technology, solid-state energy storages, and 5G, as well as advanced students studying electrical, mechanical, chemical, and materials engineering.

CRC Press

**Market:** Materials Science

August 2021: 7 x 10: 336pp

Hb: 978-0-367-54177-4: **£120.00**

eBook: 978-1-003-08808-0

\* For full contents and more information, visit: [www.routledge.com/9780367541774](http://www.routledge.com/9780367541774)

## Fundamentals of Process Safety Engineering



Samarendra Kumar Biswas, (Retd) Technical Director, Aegis Group, Umesh Mathur and Swapan Kumar Hazra, Aegis Group, India.

The proposed textbook covers technical aspects required to analyze process hazards and on implementation of corporate-wide campaigns for ensuring process safety. It discusses process control, plant-wide optimization, and safety systems that are vital in enhancing process safety in very large and complex process industries. It will be a valuable resource for senior undergraduate and graduate students in the field of for senior undergraduate and graduate students in the field of chemical engineering.

CRC Press

**Market:** Engineering - Chemical

August 2021: 6.14 x 9.21: 464pp

Hb: 978-0-367-62076-9: **£120.00**

eBook: 978-1-003-10787-3

\* For full contents and more information, visit: [www.routledge.com/9780367620769](http://www.routledge.com/9780367620769)



## Green Extraction in Separation Technology



Ali Haghghi Asl and Maryam Khajenoori

Subcritical water extraction (SWE) technology is more environmentally friendly and less expensive than conventional extraction methods. While experimental results on SWE technology have been published piecemeal, there has been a lack of a comprehensive review of the state of the art. This book fills that gap, serving as one of the first books to cover extracting with subcritical water as an environmentally friendly solvent. This monograph is aimed at researchers and advanced students in chemical and biochemical engineering.

CRC Press

**Market:** Chemical Engineering

June 2021: 5.5 x 8.5: 128pp

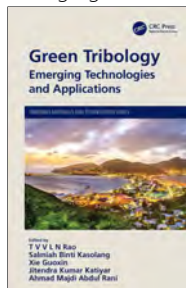
Hb: 978-1-032-05040-9: **£44.99**

eBook: 978-1-003-19577-1

\* For full contents and more information, visit: [www.routledge.com/9781032050409](http://www.routledge.com/9781032050409)

## Green Tribology

Emerging Technologies and Applications



Edited by **TVVL N Rao**, Salmiah Binti Kasolang, Xie Guoxin, Jitendra Kumar Katiyar, SRM Institute of Science and Technology, Kanchipuram, Tamilnadu, India and **Ahmad Majdi Abdul Rani**

*Series: Emerging Materials and Technologies*

Green tribology includes focus on innovative surfaces, lubricants, and materials to reduce friction and wear for environmental conservation and sustainability. This book creates a platform for sharing knowledge emerging in the field of green tribology and focuses on advances and developments in technologies and applications. Aimed at advanced students, researchers, and industry professionals, this book will be of interest to readers seeking to understand and apply sustainable practices in

tribology and lubrication engineering and related fields.

CRC Press

**Market:** Technology - Mechanical Engineering

October 2021: 6.14 x 9.21: 272pp

Hb: 978-0-367-68860-8: **£120.00**

eBook: 978-1-003-13938-6

\* For full contents and more information, visit: [www.routledge.com/9780367688608](http://www.routledge.com/9780367688608)

## Handbook of Sustainable Polymers for Additive Manufacturing



**Antonio Paesano**, The Boeing Company, Ridley Park, USA  
The book provides the latest technical information on sustainable materials used in additive manufacturing (AM). Topics covered include an up-to-date and extensive overview of raw materials, their chemistry, and functional properties of their commercial versions; a description of the relevant AM processes, products, applications, and limitations; and a forecast of sustainable materials used in AM, their properties, and applications in the near future provided by experts in the field. Data included are relative to current commercial products and are presented in easy to read tables and charts.

CRC Press  
**Market:** Polymer Science  
November 2021: 7 x 10: 584pp  
Hb: 978-1-138-47888-6: **£120.00**  
eBook: 978-1-003-22121-0

\* For full contents and more information, visit: [www.routledge.com/9781138478886](http://www.routledge.com/9781138478886)

## High-k Materials in Multi-Gate FET Devices



Edited by **Shubham Tayal**, **Parveen Singla** and **J. Paulo Davim**, University of Aveiro, Portugal  
*Series: Science, Technology, and Management*

This book focuses on high-k materials for advanced FET devices. It discusses emerging challenges in the engineering and applications and considers issues with associated technologies. This work will be of high interest to researchers in materials science, electronics engineering, IT, and related disciplines studying nanodevices such as FinFET and Tunnel FET and device-circuit codesign issues.

CRC Press  
**Market:** Materials Science/Electrical Engineering  
September 2021: 6.14 x 9.21: 232pp  
Hb: 978-0-367-63968-6: **£120.00**  
eBook: 978-1-003-12158-9

\* For full contents and more information, visit: [www.routledge.com/9780367639686](http://www.routledge.com/9780367639686)

## Interplant Resource Integration

Optimization and Allocation



**Chuei-Tin Chang**, National Cheng Kung University, Tainan City, Taiwan R.O.C., **Cheng-Liang Chen**, National Taiwan University, Taipei, Taiwan ROC and **Jui-Yuan Lee**, National Taipei University of Technology, Taiwan R.O.C.

This book presents an introduction to the planning and implementation methods for interplant resource integration. The analytic tools provided in the book can be used for the tasks of formulating mathematical programming model(s) to maximize the achievable overall saving and also devising the "fair" distribution scheme(s) to allocate individual financial benefits among the participating plants. The superstructures of various resource-exchange networks, their model formulations, and the corresponding allocation algorithms are given in sufficient detail to facilitate practical applications.

CRC Press  
**Market:** Engineering- Chemical  
July 2021: 6.14 x 9.21: 378pp  
Hb: 978-0-815-34643-2: **£130.00**  
eBook: 978-1-351-17040-6

\* For full contents and more information, visit: [www.routledge.com/9780815346432](http://www.routledge.com/9780815346432)

2nd Edition

## Introduction to Electrochemical Science and Engineering

**Serguei N. Lvov**, The Pennsylvania State University, University Park, USA

This new edition updates nearly every chapter, expanding coverage of solid-state electrochemistry, hydrogen and fuel cells, energy storage, and electrochemical techniques. It includes many case studies related to novel electrochemical energy conversion systems and phenomena such as batteries, flow cells, fuel cells, electrolyzers, supercapacitors, photoelectrochemical systems, bioelectrochemical systems, corrosion in high temperature/pressure brines, new pH, and reference electrodes. It includes about 360 conceptual and numerical problems and their detailed solutions. The book features 8 lab descriptions and instructions and is integrated with 9 online videos of lab demonstrations.

CRC Press  
October 2021: 6.14 x 9.21: 442pp  
Hb: 978-1-138-19678-0: **£89.99**  
eBook: 978-1-315-29685-2  
Prev. Ed Hb: 978-1-466-58285-9

\* For full contents and more information, visit: [www.routledge.com/9781138196780](http://www.routledge.com/9781138196780)

## Microbial Bioinformatics in the Oil and Gas Industry

Applications to Reservoirs and Processes



Edited by **Kenneth Wunch**, **Marko Stipančičev** and **Max Frenzel**

*Series: Microbes, Materials, and the Engineered Environment*

This book brings together contributions from leading scientists, academics, and experts from the oil and gas industry to discuss microbial-mediated problems faced by the industry and how bioinformatics and an interdisciplinary scientific approach can address these challenges. This book presents the major industrial problems caused by microbes as well as the beneficial activities. It provides microbial ecologists, molecular biologists, operators, engineers, chemists and academics involved in the sector an improved understanding of the significance of microcosmos in oil and gas detection, production, and degradation, leading to

better solutions impacting on operations and profitability.

CRC Press  
**Market:** Petroleum Engineering  
July 2021: 6.14 x 9.21: 292pp  
Hb: 978-0-367-90093-9: **£110.00**  
eBook: 978-1-003-02339-5

\* For full contents and more information, visit: [www.routledge.com/9780367900939](http://www.routledge.com/9780367900939)

## Military Pyrotechnics

Principles and Practices

**Ajoy K. Bose**, Indian Ordnance Factories (formerly), Pune, India

This book is aimed at all personnel involved with management of military pyrotechnic ammunitions and devices in design, production, inspection, training and use, globally.

CRC Press  
**Market:** Combustion  
November 2021: 6.14 x 9.21: 536pp  
Hb: 978-0-367-55411-8: **£140.00**  
eBook: 978-1-003-09340-4

\* For full contents and more information, visit: [www.routledge.com/9780367554118](http://www.routledge.com/9780367554118)

## Mineral-Filled Polymer Composites Handbook, Two-Volume Set



Edited by **Hanafi Ismail, S. M. Sapuan**, Universiti Putra, Malaysia and **R.A. Ilyas**

This book serves as a comprehensive overview of the latest research, trends, applications, and future directions of advanced mineral fiber-reinforced polymer composites. It is an excellent reference guide for researchers, advanced students, academics, and industry professionals interested in the synthesis mineral filled polymer and biopolymer composites, as well as those pursuing research in the broad fields of composite materials, polymers, organic/inorganic hybrid materials, and nano-assembly.

CRC Press

**Market:** Materials Science and Engineering

October 2021: 6.14 x 9.21: 640pp

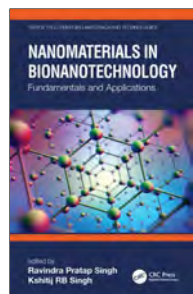
Hb: 978-0-367-70872-6: **£180.00**

eBook: 978-1-003-15326-9

\* For full contents and more information, visit: [www.routledge.com/9780367708726](http://www.routledge.com/9780367708726)

## Nanomaterials in Bionanotechnology

Fundamentals and Applications



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*Series: Emerging Materials and Technologies*

This book offers a comprehensive view of nanomaterials in biotechnology, from fundamentals to applications. It explains the basics of nanomaterial properties, synthesis, biological synthesis, and chemistry and demonstrates how to use nanomaterials to overcome problems in agricultural, environmental, and biomedical applications. This work will serve as a reference for industry professionals, advanced students, and researchers working in the discipline of bionanotechnology.

CRC Press

**Market:** Materials Science/Biotechnology

August 2021: 6.14 x 9.21: 388pp

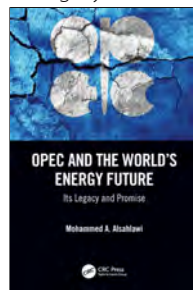
Hb: 978-0-367-68944-5: **£140.00**

eBook: 978-1-003-13974-4

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## OPEC and the World's Energy Future

Its Legacy and Promise



**Mohammed A. Alsahlawi**, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

This work offers a complete account of OPEC's past, present, and possible future in relation to economic, political, and technological changes. It focuses on the impacts of recent international political and economic developments and analyzes factors affecting OPEC as well as the world oil market. The book describes the continued importance of oil and gas as major sources of energy throughout the world. It examines OPEC's history and merits, highlights differences among OPEC members, and discusses OPEC's relations with the world. It spends considerable time on concentrating on the impact of new technologies and how they may challenge and change the

organization in the near and long term.

CRC Press

**Market:** Oil & Gas Industries

May 2021: 6.14 x 9.21: 96pp

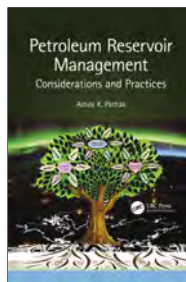
Hb: 978-0-367-34978-3: **£44.99**

eBook: 978-0-429-32821-3

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## Petroleum Reservoir Management

Considerations and Practices



**Ashok K. Pathak**, Petroleum Professional, India

Petroleum reservoir management practices are rooted in the optimization of costs and benefits specific to reservoirs with respect to their location, geology, reservoir properties, operational activities and economic considerations. This book covers important reservoir management topics that engage the attention of petroleum companies over the life cycle of an oilfield. Further, project management issues such as inadequate definition of the projects, periodic changes in the project description/scope and inordinate delays in project completion are covered in detail. It brings into its ambit a discussion of the crude oil markets, instruments, pricing mechanisms, criteria and strategies

CRC Press

**Market:** Energy, Fuels and Petrochemicals

August 2021: 6.14 x 9.21: 442pp

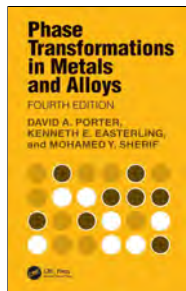
Hb: 978-0-367-51922-3: **£140.00**

eBook: 978-1-003-05570-9

\* For full contents and more information, visit: [www.routledge.com/9780367519223](http://www.routledge.com/9780367519223)

4th Edition

## Phase Transformations in Metals and Alloys



**David A. Porter**, University of Oulu, Finland, **Kenneth E.**

**Easterling**, University of Exeter, UK and **Mohamed Y. Sherif**

Revised to cover developments in the field over the past decade, the Fourth Edition provides information and examples that better illustrate the engineering relevance of this topic. It supplies a comprehensive overview of specific types of phase transformations, supplemented by practical case studies of engineering alloys. With case studies, detailed examples, and exercises drawn from relevant applications, the Fourth Edition keeps the previous editions' popular easy-to-follow style and excellent mix of basic and advanced information, making it ideal for those new to the field. The unique presentation links basic understanding of theory with application in a gradually

progressive manner.

CRC Press

October 2021: 6.14 x 9.21: 620pp

Hb: 978-0-367-82077-0: **£140.00**

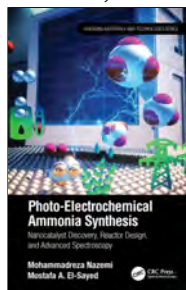
Pb: 978-0-367-43034-4: **£52.99**

eBook: 978-1-003-01180-4

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## Photo-Electrochemical Ammonia Synthesis

Nanocatalyst Discovery, Reactor Design, and Advanced Spectroscopy



**Mohammadreza Nazemi** and **Mostafa A. El-Sayed**

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CRC Press

**Market:** Chemical Engineering

July 2021: 6.14 x 9.21: 164pp

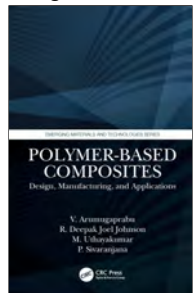
Hb: 978-0-367-69437-1: **£89.99**

eBook: 978-1-003-14180-8

\* For full contents and more information, visit: [www.routledge.com/9780367694371](http://www.routledge.com/9780367694371)

## Polymer-Based Composites

Design, Manufacturing, and Applications



Edited by **V. Arumugaprabu, R. Deepak Joel Johnson, M. Uthayakumar** and **P. Sivaranjana**

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This book presents the concepts and methods involved in the development of various fiber-reinforced composite materials. It offers a comprehensive view of materials, mechanics, processing, design, and applications. This text helps advanced students, researchers, and industry personnel understand recent advances in the field and achieve practical results in the development, manufacture, and application of advanced composite materials.

CRC Press

**Market:** Materials Science/Mechanical Engineering

August 2021: 6.14 x 9.21: 166pp

Hb: 978-0-367-64791-9: **£99.99**

eBook: 978-1-003-12630-0

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Two-Volume Set



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This two-volume work captures advances in thin films and coatings, one focusing on protection and the other on functional applications. It highlights advances in the preparation, characterization, and applications of protective and functional micro-/nano-scaled films and coatings and includes theoretical modeling, growth/synthesis, and cholorization/properties. It

benefits industry professionals and researchers working in areas related to semiconductor, optoelectronics, plasma technology, solid-state energy storages, and 5G, as well as advanced students studying electrical, mechanical, chemical, and materials engineering.

CRC Press

**Market:** Materials Science

August 2021: 7 x 10: 710pp

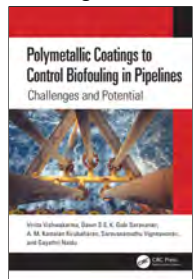
Hb: 978-0-367-54240-5: **£210.00**

eBook: 978-1-003-08830-1

\* For full contents and more information, visit: [www.routledge.com/9780367542405](http://www.routledge.com/9780367542405)

## Polymetallic Coatings to Control Biofouling in Pipelines

Challenges and Potential



**Vinita Vishwakarma**, Sathyabama Institute of Science and Technology, Tamil Nadu, India., **Dawn S S**, Centre for Waste Management, a Centre of Excellence for Energy Research, **K. Gobi Saravanan**, Sathyabama Institute of science and technology, Tamil Nadu, India., **A. M. Kamalan Kirubaharan**, Sathyabama Institute of Science and Technology, Tamil Nadu, India., **Saravanamuthu Vigneswaran**, University of Technology, Sydney (UTS), Australia. and **Gayathri Naidu**, University of Technology, Sydney (UTS), Australia.

This book focusses on nanostructured polymetallic coatings for corrosion and biofouling protection in offshore oil and gas pipelines, marine pipelines, ship structures, and port facilities and it discusses corrosion resistance surface of several engineered structures. Impressing upon various reasons of biofouling in pipelines that transport crude and refined petroleum, gas, biofuels, other fluids including sewage, slurry, water for drinking or irrigation, the underlying mechanism is thoroughly explained. A comparison of various protective techniques is also highlighted for choice of methods for specific applications.

CRC Press

**Market:** Coatings and Thin Films

September 2021: 6.14 x 9.21: 138pp

Hb: 978-1-032-04489-7: **£140.00**

eBook: 978-1-003-19344-9

\* For full contents and more information, visit: [www.routledge.com/9781032044897](http://www.routledge.com/9781032044897)

## Protective Thin Coatings Technology



Edited by **Sam Zhang**, Nanyang Technological University, Singapore, **Jyh-Ming Ting**, National Cheng Kung University, Tainan, Taiwan and **Wan-Yu Wu**

*Series: Advances in Materials Science and Engineering*

This book highlights developments and advances in the preparation, characterization, and applications of protective micro-/nano-scaled films and coatings. This comprehensive work will benefit industry professionals and researchers working in areas related to semiconductor, optoelectronics, plasma technology, solid-state energy storages, and 5G, as well as advanced students studying electrical, mechanical, chemical, and materials engineering.

CRC Press

**Market:** Materials Science

August 2021: 7 x 10: 374pp

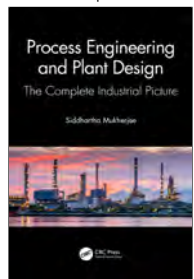
Hb: 978-0-367-54250-4: **£120.00**

eBook: 978-1-003-08834-9

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## Process Engineering and Plant Design

The Complete Industrial Picture



**Siddhartha Mukherjee**, Air Liquide Global E&C Solutions India Private Limited, INDIA

The book provides the whole horizon of process engineering and plant design from concept phase through the execution to commissioning of the plant in real practice. Providing a complete industrial perspective, it covers the pertinent guidelines and standards and how engineering documents are generated using these standards with relevant topics.

CRC Press

**Market:** Chemical Engineering

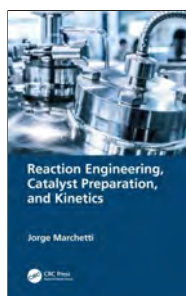
October 2021: 6.14 x 9.21: 320pp

Hb: 978-0-367-24841-3: **£99.99**

eBook: 978-0-429-28465-6

\* For full contents and more information, visit: [www.routledge.com/9780367248413](http://www.routledge.com/9780367248413)

## Reaction Engineering, Catalyst Preparation, and Kinetics



**Jorge Marchetti**

This textbook covers reaction engineering, catalyst preparation, and kinetics. It features a section of fully solved examples as well as end of chapter problems. It includes coverage of catalyst characterization and its impact on kinetics and reactor modeling. It presents simpler cases as well as fully developed complicated scenarios.

CRC Press

**Market:** Engineering - Chemical

September 2021: 6.14 x 9.21: 386pp

Hb: 978-1-138-60598-5: **£110.00**

eBook: 978-0-429-46684-7

\* For full contents and more information, visit: [www.routledge.com/9781138605985](http://www.routledge.com/9781138605985)

## Semiconducting Black Phosphorus

From 2D Nanomaterial to Emerging 3D Architecture

Han Zhang, Nasir Mahmood Abbasi and Bing Wang

*Series: Emerging Materials and Technologies*

Black phosphorus-based two-dimensional nanomaterials are used in practical industrial applications in biomedicine, electronics, and photonics. There is a need to controllably shape engineered scalable structures of 2D BP building blocks to form 3D architectures, as it is expected that these architectures will deliver better materials performance. This book provides an overview of the various synthetic strategies for 2D BP single layer nanomaterials, their scalable synthesis, properties, and assemblies into 3D architecture. It is an essential reference for researchers and advanced students in materials science and chemical, optoelectronic, and electrical engineering.

CRC Press

**Market:** Materials Science and Engineering

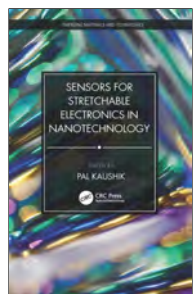
October 2021: 6.14 x 9.21: 240pp

Hb: 978-1-032-06763-6: **£110.00**

eBook: 978-1-003-21714-5

\* For full contents and more information, visit: [www.routledge.com/9781032067636](http://www.routledge.com/9781032067636)

## Sensors for Stretchable Electronics in Nanotechnology



Edited by **Kaushik Pal**

*Series: Emerging Materials and Technologies*

The book discusses the fabrication of semiconducting materials, cost-effective synthesis, and unique mechanisms that enable the fabrication of fully elastic electronic devices that can tolerate high strain. It reviews applications that benefit from highly compliant electronics, including transistors, photonic devices, and sensors. This book will be a valuable resource for students, scientists, and professionals working in the research areas of sensor technologies, nanotechnology, materials science, chemistry, physics, biological and medical sciences, the healthcare industry, environmental science, and technology.

CRC Press

**Market:** Materials Science/Electrical Engineering

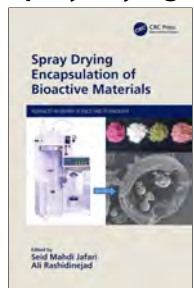
September 2021: 6.14 x 9.21: 170pp

Hb: 978-0-367-64281-5: **£99.99**

eBook: 978-1-003-12378-1

\* For full contents and more information, visit: [www.routledge.com/9780367642815](http://www.routledge.com/9780367642815)

## Spray Drying Encapsulation of Bioactive Materials



Edited by **Seid Mahdi Jafari** and **Ali Rashidinejad**, Riddet Institute, Massey University, New Zealand

*Series: Advances in Drying Science and Technology*

Encapsulation of bioactives is a fast-growing approach in the food and pharmaceutical industry and this book serves as a source of information to offer specialized and in-depth knowledge on the most well-known and used encapsulation technology (i.e., spray drying) and corresponding advances. The book describes the efficacy of spray drying in encapsulation of bioactive ingredients and discusses the potential of this technique to pave the way toward cost-effective, industrially relevant, reproducible, and scalable processes. It presents the latest research outcomes and is of interest to food manufacturers,

pharmacists, and chemical engineers.

CRC Press

**Market:** Food Engineering/Pharmaceutical Engineering/Chemical Engineering

August 2021: 7 x 10: 496pp

Hb: 978-0-367-36646-9: **£150.00**

eBook: 978-0-429-35546-2

\* For full contents and more information, visit: [www.routledge.com/9780367366469](http://www.routledge.com/9780367366469)

## Sustainable Technologies for Water and Wastewater Treatment



Edited by **Noel Jacob Kaleekkal**, National Institute of Technology, India, **Prasanna Kumar S Murali**, Department of Chemical Engineering, National Institute of Technology, Calicut, India, **Saravanamuthu Vigneswaran**, Faculty of Engineering and IT, University of Technology Sydney (UTS), Australia and **Upal Ghosh**, University of Maryland Baltimore County, USA

It is aimed at professionals, graduate students, researchers in civil, sanitary, chemical, environmental engineering and materials science.

CRC Press

**Market:** Water Science and Engineering

July 2021: 6.14 x 9.21: 412pp

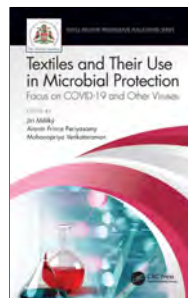
Hb: 978-0-367-51037-4: **£150.00**

eBook: 978-1-003-05223-4

\* For full contents and more information, visit: [www.routledge.com/9780367510374](http://www.routledge.com/9780367510374)

## Textiles and Their Use in Microbial Protection

Focus on COVID-19 and Other Viruses



Edited by **Jiri Militky**, **Aravin Prince Periyasamy** and **Mohanapriya Venkataraman**

*Series: Textile Institute Professional Publications*

Textiles and Their Use in Microbial Protection: Focus on COVID-19 and Other Viruses provides readers with vital information about disinfection mechanisms used in textile applications in the fight against dangerous microbes and viruses. It is aimed at textile and materials engineers as well as readers in medical fields and offers a comprehensive view of fundamentals and solutions.

CRC Press

**Market:** Textile Engineering

June 2021: 6.14 x 9.21: 318pp

Hb: 978-0-367-69108-0: **£190.00**

Pb: 978-0-367-69105-9: **£74.99**

eBook: 978-1-003-14043-6

\* For full contents and more information, visit: [www.routledge.com/9780367691080](http://www.routledge.com/9780367691080)

## The Prospect of Industry 5.0 in Biomanufacturing



Edited by **Pau Loke Show**, **Kit Wayne Chew** and **Tau Chuan Ling**

This is the first book to present the idea of Industry 5.0 in biomanufacturing and bioprocess engineering, both upstream and downstream. It details the latest technologies and how they can be used efficiently and explains process analysis from an engineering point of view. In addition, it covers applications and challenges. This work enables readers in industry and academia working in the biomanufacturing engineering sector to understand current trends and future directions in this field.

CRC Press

**Market:** Chemical Engineering/Manufacturing Engineering

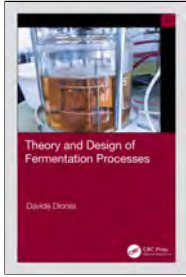
July 2021: 6.14 x 9.21: 326pp

Hb: 978-0-367-49378-3: **£99.99**

eBook: 978-1-003-08067-1

\* For full contents and more information, visit: [www.routledge.com/9780367493783](http://www.routledge.com/9780367493783)

## Theory and Design of Fermentation Processes



**Davide Dionisi**, University of Aberdeen, Aberdeen, UK

This textbook covers the kinetics and design of fermentation processes (any industrial process that use living microbes). It starts with concise introduction to microbes and their metabolism, followed by rate equations, stoichiometry, derivation and use of mass balances for the design processes. It covers oxygen transfer and mass balances, heat transfer, and design and scale-up/scale-down of fermentation processes. It further includes industrially relevant process examples, over 100 solved examples, questions and problems, and solution of differential equations and systems of equations in Excel. This book aims at senior undergraduate students in biochemical (fermentation) engineering.

CRC Press

**Market:** Bioprocessing  
September 2021: 6 x 9: 336pp  
Hb: 978-1-032-10828-5: **£76.99**  
eBook: 978-1-003-21727-5

\* For full contents and more information, visit: [www.routledge.com/9781032108285](http://www.routledge.com/9781032108285)

## What Every Engineer Should Know About the Internet of Things

**Joanna F. DeFranco**, The Pennsylvania State University, Malvern, USA and **Mohamad Kassab**

*Series: What Every Engineer Should Know*

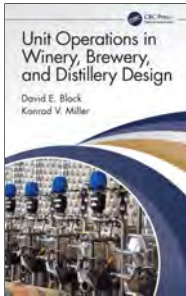
This practical text provides an introduction to IoT that can be understood by every engineering discipline and discusses detailed applications of IoT. Written to be accessible to non-experts in the subject, this work communicates the importance of this technology and how it can support and challenge all interrelated actors as well as all involved assets across many domains.

CRC Press

**Market:** General Engineering  
November 2021: 6.14 x 9.21: 224pp  
Hb: 978-0-367-46272-7: **£115.00**  
Pb: 978-0-367-85878-0: **£44.99**  
eBook: 978-1-003-02779-9

\* For full contents and more information, visit: [www.routledge.com/9780367462727](http://www.routledge.com/9780367462727)

## Unit Operations in Winery, Brewery, and Distillery Design



**David E. Block** and **Konrad V. Miller**

This text focuses on equipment and facility design for wineries, breweries, and distilleries and fills the need for a title that focuses on the challenges inherent to specifying and building alcoholic beverage production facilities and the equipment therein. The book walks through the process flow of grapes to wine, grain to beer, and wine and beer to distilled spirits, with an emphasis on the underlying engineering principles, the equipment involved in these processes, and the selection and design of said equipment. Written at a level accessible to both engineers and non-engineers, this textbook is aimed at students, winemakers, brewers, distillers, and process engineers.

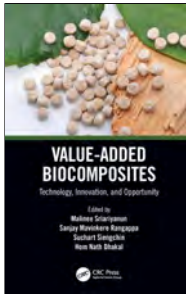
CRC Press

**Market:** Chemical Engineering/Food Engineering  
October 2021: 6.14 x 9.21: 384pp  
Hb: 978-0-367-56387-5: **£94.99**  
eBook: 978-1-003-09749-5

\* For full contents and more information, visit: [www.routledge.com/9780367563875](http://www.routledge.com/9780367563875)

## Value-Added Biocomposites

Technology, Innovation, and Opportunity



Edited by **Malinee Sriariyanun**, **Sanjay Mavinkere Rangappa**, King Mongkut's University of Technology, North Bangkok, **Suchart Siengchin**, King Mongkut's University of Technology North Bangkok and **Hom Nath Dhakal**

This book explores advances in research, processing, manufacturing, and novel applications of biocomposites. It describes the current market situation, commercial competition, and societal and economic impacts and advantages of substituting biocomposites for conventional composites, including natural fibers and bioplastics. Combining technical, economic, and environmental topics, this work provides researchers, advanced students, and industry professionals a holistic overview of the value that biocomposites add across a

variety of engineering applications and how to balance research and development with practical results.

CRC Press

**Market:** Materials Science and Engineering  
October 2021: 6.14 x 9.21: 456pp  
Hb: 978-0-367-67926-2: **£130.00**  
eBook: 978-1-003-13753-5

\* For full contents and more information, visit: [www.routledge.com/9780367679262](http://www.routledge.com/9780367679262)

## Aircraft Design Concepts

An Introductory Course



James DeLaurier

Aircraft Design Concepts: An Introductory Course introduces the principles of aircraft design through a quantitative approach developed from the author's extensive experience in teaching aircraft design. Building on prerequisite courses, the text develops basic design skills and methodologies, while also explaining the underlying physics. Written for senior undergraduate and graduate students taking a single-semester course on Aircraft Design or Aircraft Performance, the book imparts both the technical knowledge and creativity needed for aircraft design. It addresses conventional tail-aft monoplanes, "flying-wing", biplane, and canard configurations.

CRC Press

Market: Engineering - Mechanical  
November 2021: 7 x 10: 624pp  
Hb: 978-1-138-03339-9: £120.00  
eBook: 978-1-315-22816-7

\* For full contents and more information, visit: [www.routledge.com/9781138033399](http://www.routledge.com/9781138033399)



2nd Edition

## An Introduction to Compressible Flow



Forrest E. Ames, University of North Dakota, USA and  
Clement C. Tang, University of North Dakota, USA

*An Introduction to Compressible Flow, Second Edition* covers the material typical of a single-semester course in compressible flow. The book begins with a brief review of thermodynamics and control volume fluid dynamics, then proceeds to cover isentropic flow, normal shock waves, shock tubes, oblique shock waves, Prandtl-Meyer expansion fans, Fanno-line flow, Rayleigh-line flow, and conical shock waves. The book is intended for senior undergraduate engineering students studying thermal-fluids and practicing engineers in the areas of aerospace or energy conversion. It also provides supplemental coverage of compressible flow material in gas turbine and aerodynamics courses.

CRC Press

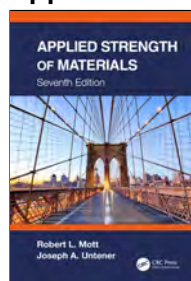
Market: Engineering - Mechanical  
July 2021: 6.14 x 9.21: 296pp  
Hb: 978-0-367-89567-9: £84.99  
eBook: 978-1-003-04294-5

\* For full contents and more information, visit: [www.routledge.com/9780367895679](http://www.routledge.com/9780367895679)



7th Edition

## Applied Strength of Materials



Robert L. Mott, University of Dayton, Ohio, USA and Joseph  
A. Untener, University of Dayton, Ohio, USA

Introducing the theoretical background of the subject, with a strong visual component, the book equips the reader with problem-solving techniques. The updated seventh edition incorporates new technologies, with a pedagogical approach. It emphasizes realistic engineering applications for the analysis and design of structural members.

A "Big Picture" section starts each chapter to help students grasp the overall objectives and their application in industrial applications. Step-by-step problem-solving approaches are included throughout the book. While calculus is used sparingly, detailed developments of important design-related formulas

are provided.

CRC Press

Market: Mechanical Engineering  
July 2021: 6.14 x 9.21: 1172pp  
Hb: 978-0-367-82078-7: £140.00  
Pb: 978-1-032-00222-4: £56.00  
eBook: 978-1-003-17320-5  
Prev. Ed Hb: 978-1-498-71675-8

\* For full contents and more information, visit: [www.routledge.com/9780367820787](http://www.routledge.com/9780367820787)



## Aviation Safety and Security

Utilizing Technology to Prevent Aircraft Fatality



Stephen J. Wright

The book focuses on ways to better manage and prevent aircraft-based homicide events while in-flight using alternate technology to replace the Cockpit Voice Recorder (CVR) and/or Digital Flight Data Recorder (DFDR) functions. While these events are infrequent, the implementation of real-time predictive maintenance would allow aircraft operators to better manage both scheduled and unscheduled maintenance events. The book explores historical events of in-flight homicide and includes relevant accident case study excerpts (i.e. NTSB, AAIB).

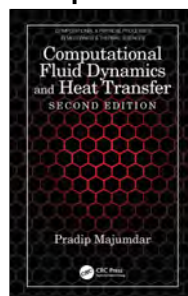
CRC Press

Market: Engineering - Aerospace  
June 2021: 6.14 x 9.21: 202pp  
Hb: 978-0-367-27519-8: £89.99  
eBook: 978-0-429-29645-1

\* For full contents and more information, visit: [www.routledge.com/9780367275198](http://www.routledge.com/9780367275198)

2nd Edition

## Computational Fluid Dynamics and Heat Transfer



Pradip Majumdar, Northern Illinois University, DeKalb, USA  
*Series: Computational & Physical Processes in Mechanics & Thermal Science*

This book provides a thorough understanding of fluid dynamics and heat and mass transfer. It contains new chapters on mesh generation and computational modeling of turbulent flow. Combining theory and practice in classic problems and computer code, the text includes examples in ANSYS, STAR CCM+, and COMSOL. The text will be valuable to Engineering instructors and students taking courses in computational heat transfer and computational fluid dynamics. With detailed explanations on how to implement computational methodology into a computer code, students will be able to solve complex

problems on their own, including problems in heat transfer, mass transfer, and fluid flows.

CRC Press

Market: Engineering - Mechanical  
August 2021: 7 x 10: 664pp  
Hb: 978-1-498-70374-1: £130.00  
Prev. Ed Hb: 978-1-560-32994-7

\* For full contents and more information, visit: [www.routledge.com/9781498703741](http://www.routledge.com/9781498703741)

## Computational Fluid Dynamics for Mechanical Engineering

George Qin, Cedarville University, USA

This textbook presents the basic methods, numerical schemes, and algorithms of computational fluid dynamics (CFD). Readers will learn to compose MATLAB programs to solve realistic fluid flow problems. The textbook was written for a first course in computational fluid dynamics (CFD) taken by undergraduate students in a Mechanical Engineering major. Newer research results on stability and boundedness of various numerical schemes are incorporated. The book emphasizes large eddy simulation (LES) in the chapter on turbulent flow simulation besides the two-equation models. Volume of fraction (VOF) and related methods will be the focus of the chapter on two-phase flows.

CRC Press

Market: Engineering - Mechanical  
October 2021: 6.14 x 9.21: 392pp  
Hb: 978-0-367-68729-8: £79.99  
eBook: 978-1-003-13882-2

\* For full contents and more information, visit: [www.routledge.com/9780367687298](http://www.routledge.com/9780367687298)





## Control Applications of Vehicle Dynamics

Jingsheng Yu, JSJ Corporation, Germany and Vladimir Vantsevich, University of Alabama at Birmingham, USA

Series: *Ground Vehicle Engineering*

Presenting a clear overview of fundamental vehicle dynamics and vehicle system mathematical models, the book covers the design of model based classical PID, adaptive, quadratic optimal and inverse dynamics-based controllers of linear and non-linear systems. It details Kalman-Bucy filtering, and its practical applications, alongside the basic kinematics and dynamics of a vehicle in planar motion, deriving equations of wheel dynamics and tire forces in forms appropriate for control design. The book also discusses lateral vehicle dynamics and vehicle vertical dynamics, high level controllers and vehicle sensor signal estimation

CRC Press

**Market:** Mechanical Engineering  
September 2021: 7 x 10: 368pp  
Hb: 978-0-367-68105-0: **£76.00**  
eBook: 978-1-003-13430-5

\* For full contents and more information, visit: [www.routledge.com/9780367681050](http://www.routledge.com/9780367681050)

2nd Edition

## Data Driven Energy Centered Maintenance



Fadi Alshakhshir and Marvin T. Howell

Series: *Energy Management*

This edition follows the same methodology as the First. It provides detailed descriptions of the latest technologies associated with Artificial Intelligence and Machine Learning which enable data-driven decision-making processes about the equipment's operation and maintenance. The book contains a detailed description of the digital transformation process of most of the maintenance inspection tasks as they move away from being manually triggered. The book is aimed at building operators as well as those building automation companies who are working continuously to digitalize building operation and maintenance procedures.

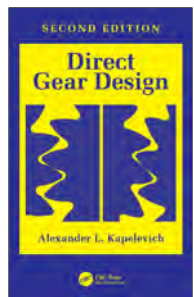
River Publishers

**Market:** Building Operation and Maintenance  
July 2021: 6.14 x 9.21: 266pp  
Hb: 978-8-770-22357-7: **£120.00**  
eBook: 978-1-003-19510-8  
Prev. Ed Hb: 978-1-138-73537-8

\* For full contents and more information, visit: [www.routledge.com/97888770223577](http://www.routledge.com/97888770223577)

2nd Edition

## Direct Gear Design



Alexander L. Kapelevich, AKGears, LLC, Shoreview, Minnesota, USA

Practically all modern gears are over-standardized, not allowing gear design engineers to see possible gear design solutions beyond standard limits. The updated and improved Second Edition of Direct Gear Design describes a nonstandard gear design approach that makes it possible to significantly improve gear drive performance. It also explores the use of gears made from powder metal and plastic, and a survey of gear manufacture. Written to be easily understood and practical, this fully updated edition will serve as a guidebook for all professionals exploring high-performance gearing system technologies.

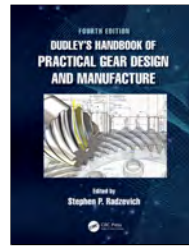
CRC Press

**Market:** Mechanical Engineering  
June 2021: 6.14 x 9.21: 364pp  
Hb: 978-0-367-35859-4: **£115.00**  
eBook: 978-1-003-17148-5  
Prev. Ed Hb: 978-1-439-87618-3

\* For full contents and more information, visit: [www.routledge.com/9780367358594](http://www.routledge.com/9780367358594)

4th Edition

## Dudley's Handbook of Practical Gear Design and Manufacture



Edited by Stephen P. Radzevich, APEX Tool Group, LLC, and EATON Corporation, Lexington, South Carolina, USA

Updated throughout to reflect cutting edge research, this edition includes new contributions from experts in the field, providing a clear overview of the foundations of advanced gear systems, alongside new material on the potential of technologies such as high performance plastic gears alongside the issues these can encounter. The book also includes innovative chapters discussing topics such as involute gear drives and gear strength calculation based on the new ISO 6336. Additionally, gear micro-geometry modifications and planetary gear designs are

also discussed.

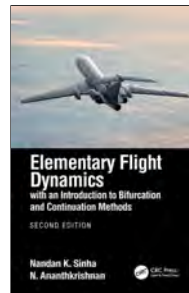
CRC Press

**Market:** Engineering - Mechanical  
August 2021: 7.44 x 9.69: 1170pp  
Hb: 978-0-367-64902-9: **£150.00**  
eBook: 978-1-003-12688-1  
Prev. Ed Hb: 978-1-498-75310-4

\* For full contents and more information, visit: [www.routledge.com/9780367649029](http://www.routledge.com/9780367649029)

2nd Edition

## Elementary Flight Dynamics with an Introduction to Bifurcation and Continuation Methods



Nandan K. Sinha, Indian Institute of Technology Madras, Chennai and N. Ananthkrishnan, IDEA Research Co. LTD, Pune, India

This book uses an optimal mix of physical insight and mathematical presentation to illustrate core concepts of professional aircraft flight dynamics. Updated version of the aerodynamic model is presented with the corrected definition of the rate (dynamic) derivatives, supported with examples of real-life airplanes and related data, supported by open-source computational tool. It introduces bifurcation and continuation methods as a tool for flight dynamic analysis. Second edition covers wind effects on aircraft modal dynamics and case studies of an airship dynamics, effects of morphing characteristics on

the dynamic modes of a model rigid fixed-wing UAV with added data and solved examples.

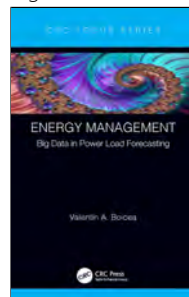
CRC Press

**Market:** Aerospace Engineering  
September 2021: 6.14 x 9.21: 390pp  
Hb: 978-0-367-56207-6: **£105.00**  
eBook: 978-1-003-09680-1  
Prev. Ed Hb: 978-1-439-88602-1

\* For full contents and more information, visit: [www.routledge.com/9780367562076](http://www.routledge.com/9780367562076)

## Energy Management

Big Data in Power Load Forecasting



Valentin A. Boicea, University Politehnica of Bucharest, Romania

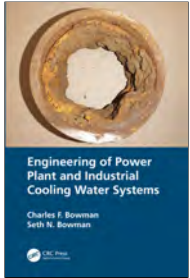
This book introduces the principle of carrying out a medium term load forecast (MTLF) at power system level, based on the Big Data concept and Convolutionary Neural Network (CNNs). It also presents further research directions in the field of Deep Learning techniques and Big Data, as well as how these two concepts are used in power engineering. The book will be of interest to electrical engineers, power engineers, and energy services professionals. Efficient processing and accuracy of Big Data in the load forecast in power engineering leads to a significant improvement in the consumption pattern of the client and, implicitly, a better consumer awareness.

CRC Press

**Market:** Engineering - Energy  
June 2021: 5.5 x 8.5: 92pp  
Hb: 978-0-367-70616-6: **£44.99**  
eBook: 978-1-003-14721-3

\* For full contents and more information, visit: [www.routledge.com/9780367706166](http://www.routledge.com/9780367706166)

## Engineering of Power Plant and Industrial Cooling Water Systems



**Charles F. Bowman**, Chuck Bowman Associates, Inc., USA and **Seth N. Bowman**, Consolidated Nuclear Security, LLC, USA

This book provides a reference to analysis techniques of common cooling water system problems and a historical perspective on solutions to chronic cooling water system problems, such as corrosion and biofouling. It is intended for graduate students and practicing engineers working in both nuclear and fossil power plants and industrial facilities that use large amounts of cooling water. Professionals working on new designs or modifications of their systems should consider the actual challenges to the systems covered in the text. The book discusses best design practices for cooling water systems that are required

to support the operation of all electric power plants.

CRC Press

**Market:** Engineering - Mechanical

August 2021: 6.14 x 9.21: 174pp

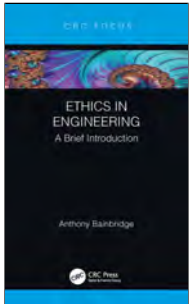
Hb: 978-0-367-77528-5: **£68.99**

eBook: 978-1-003-17243-7

\* For full contents and more information, visit: [www.routledge.com/9780367775285](http://www.routledge.com/9780367775285)

## Ethics for Engineering

A Brief Introduction



**Anthony Bainbridge**, University of Bath, UK

Engineering professionals face a duty to uphold reliable and trustworthy behaviour when working across all disciplines and industries. Accuracy and rigour are essential parts of the modern workplace, and are increasingly of concern to practicing engineers. Using case studies to highlight examples of issues within the workplace and how these can be appropriately handled, this book is an accessible tool through which engineers can gain confidence in dealing with ethical dilemmas.

CRC Press

**Market:** Mechanical Engineering

August 2021: 5.5 x 8.5: 106pp

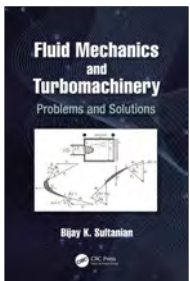
Hb: 978-1-032-07690-4: **£44.99**

eBook: 978-1-003-20843-3

\* For full contents and more information, visit: [www.routledge.com/9781032076904](http://www.routledge.com/9781032076904)

## Fluid Mechanics and Turbomachinery

Problems and Solutions



**Bijay K Sultanian**, University of Central Florida, FL

This book is an ideal resource for enhancing graduate-level fluid mechanics and turbomachinery theory with real-world problems and detailed solutions. It is one thing to understand fundamental concepts and various conservation laws in fluid mechanics but applying them to solve practical problems is another challenge. The book enables students to practice applying key concepts of fluid mechanics and the governing conservation laws to solve real-world problems. As a source of numerous graduate-level practice problems with detailed solutions, the book will be helpful to students, teaching faculty, practicing engineers, and researchers engaged in many branches of fluid mechanics.

CRC Press

**Market:** Engineering - Mechanical

July 2021: 6.14 x 9.21: 430pp

Hb: 978-0-367-51475-4: **£160.00**

Pb: 978-0-367-51474-7: **£59.99**

eBook: 978-1-003-05399-6

\* For full contents and more information, visit: [www.routledge.com/9780367514754](http://www.routledge.com/9780367514754)

## Fluid Waves

**Richard Manasseh**, Swinburne University of Technology, Victoria, Australia

The book derives the detail of the mathematical basis for the most commonly encountered waves in science and engineering. It gives the basis to undertake calculations required for important occupations such as maritime engineering, climate science, urban noise control, and medical diagnostics. The book initiates with fluid dynamics basis including subsequent chapters covering surface gravity waves, sound waves, internal gravity waves and waves in rotating fluids, and details basic phenomena such as refraction. Thereafter, specialized application chapters include description of specific contemporary problems. All concepts are supported by narrative examples, illustrations, and case studies.

CRC Press

**Market:** Fluid Dynamics

November 2021: 6.14 x 9.21: 320pp

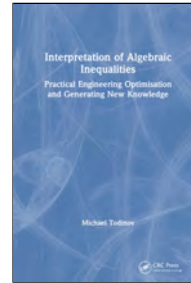
Hb: 978-0-367-27164-0: **£110.00**

eBook: 978-0-429-29526-3

\* For full contents and more information, visit: [www.routledge.com/9780367271640](http://www.routledge.com/9780367271640)

## Interpretation of Algebraic Inequalities

Practical Engineering Optimisation and Generating New Knowledge



**Michael Todinov**, Oxford Brookes University, UK

Algebraic inequalities have been used in mathematics, as a tool for characterisation of reliability functions and to reduce risk and uncertainty. Through interpreting algebraic inequalities, engineers can, for example, correctly predict the outcome of uncertain sequences, which helps choose materials and processes for manufacturing. The book will demonstrate how this can be put into practice through covering the algebraic inequalities suitable for interpretation in different contexts. This book will be of interest to engineers and students in the field of optimisation, engineering design, reliability engineering and risk management.

CRC Press

**Market:** Mechanical Engineering

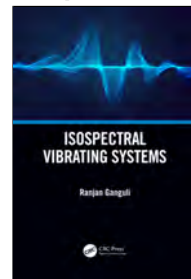
October 2021: 6 x 9: 160pp

Hb: 978-1-032-05917-4: **£68.99**

eBook: 978-1-003-19983-0

\* For full contents and more information, visit: [www.routledge.com/9781032059174](http://www.routledge.com/9781032059174)

## Isospectral Vibrating Systems



**Ranjan Ganguli**, Department of Aerospace Engineering, Indian Institute of Science, Bangalore, India

This book presents isospectral approach for several important mechanical vibrating systems. Discrete and continuous isospectral systems are discussed using a simple multi-degree of freedom spring-mass system followed by illustration of isospectral beams and their solution through evolutionary computing. Next, it addresses axially loaded Euler-Bernoulli beams and aims to find isospectral counterparts of these systems. The practical application of these isospectral systems for vibration testing and for finding new closed form solutions is discussed. A considerable part of the book is devoted to isospectral rotating beams and their non-rotating analogs including Rayleigh and

Timoshenko beams.

CRC Press

**Market:** Vibration and Applied Dynamics

August 2021: 6.14 x 9.21: 302pp

Hb: 978-0-367-72570-9: **£140.00**

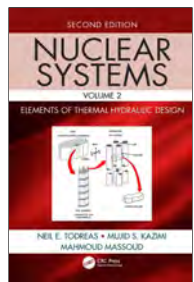
eBook: 978-1-003-15537-9

\* For full contents and more information, visit: [www.routledge.com/9780367725709](http://www.routledge.com/9780367725709)

2nd Edition

**Nuclear Systems Volume II**

Elements of Thermal Hydraulic Design



Neil E. Todreas, Massachusetts Institute of Technology, USA, Mujid S. Kazimi, Massachusetts Institute of Technology, Cambridge, USA and Mahmoud Massoud, University of Maryland, USA

*Nuclear Systems Volume II: Elements of Thermal Hydraulic Design, Second Edition* provides advanced coverage of a wide variety of thermal fluid systems and technologies in nuclear power plants, including discussions of the latest reactor designs and their thermal/fluid technologies. Beyond the thermal hydraulic design and analysis of the core of a nuclear reactor, the book covers other components of the nuclear power plant, such as the pressurizer, containment, and the entire primary coolant system.

The book serves as a textbook for advanced undergraduate and graduate students taking courses in nuclear engineering, studying thermal/hydraulic systems in nuclear power plants.

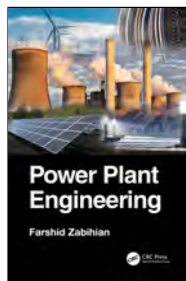
CRC Press

Market: Engineering - Nuclear

November 2021: 7 x 10: 560pp

Hb: 978-1-482-23958-4: £99.00

Prev. Ed Hb: 978-1-560-32088-3

\* For full contents and more information, visit: [www.routledge.com/9781482239584](http://www.routledge.com/9781482239584)**Power Plant Engineering**

Farshid Zabihian, California State University, Sacramento, USA

This textbook begins with conventional power generation technologies, including steam power plants and gas turbine cycles. It then introduces more advanced cycles, including combined heat and power (CHP) cycles, combined cycle power plants (CCPP), integrated gasification combined cycles (IGCC), and fuel cells. The book is intended for Mechanical and Nuclear Engineering instructors and students taking a power plant design or operation course. It also covers power generation technologies based on renewable energy resources and the environmental effects of each.

CRC Press

Market: Engineering - Mechanical

June 2021: 6.14 x 9.21: 1250pp

Hb: 978-1-498-70712-1: £120.00

eBook: 978-0-429-06945-1

\* For full contents and more information, visit: [www.routledge.com/9781498707121](http://www.routledge.com/9781498707121)**Operations Research Using Excel**

A Case Study Approach

Vikas Singla, Assistant Professor, School of Management Studies, Punjabi University, Patiala, India.

Discussing various operations research techniques, by introducing industrial case study, and applying quantitative models, this text will be useful as a reference text for senior undergraduate and graduate students in the fields of mechanical engineering, civil engineering, industrial engineering, and production engineering.

CRC Press

Market: Mechanical and Civil Engineering

September 2021: 6.14 x 9.21: 328pp

Hb: 978-0-367-64643-1: £110.00

eBook: 978-1-003-21296-6

\* For full contents and more information, visit: [www.routledge.com/9780367646431](http://www.routledge.com/9780367646431)**Product Design and the Role of Representation**

Foundations for Design Thinking in Practice



Eujin Pei, Brunel University London, UK and James Andrew Self, Ulsan National Institute of Science & Technology, Republic of Korea

Design thinking is a method that has the potential to stimulate and enhance creativity. This book enhances understanding of what constitutes design thinking, why it is used and how it can be applied in practice to explore and develop ideas. The book positions a particular type of thinking through design representations, exploring this from its roots in design history, to the types of thinking in action associated with contemporary design practice. A taxonomy of design representations as a scaffold to express design intent, is applied to real world case studies.

CRC Press

Market: Mechanical Engineering

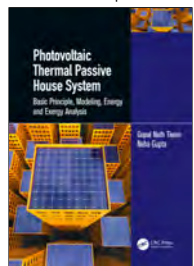
November 2021: 7 x 10: 232pp

Hb: 978-0-367-63001-0: £120.00

eBook: 978-1-003-22769-4

\* For full contents and more information, visit: [www.routledge.com/9780367630010](http://www.routledge.com/9780367630010)**Photovoltaic Thermal Passive House System**

Basic Principle, Modeling, Energy and Exergy Analysis



Gopal Nath Tiwari and Neha Gupta

This book is aimed at graduate students and researchers in civil engineering, solar energy, renewable energy, architecture.

CRC Press

Market: Civil Engineering

August 2021: 7 x 10: 384pp

Hb: 978-1-138-33355-0: £150.00

eBook: 978-0-429-44590-3

\* For full contents and more information, visit: [www.routledge.com/9781138333550](http://www.routledge.com/9781138333550)**Science and Engineering of Small Arms**

Prasanta Kumar Das, RFI, OFB & IGM, India, Lalit Pratim Das and Dev Pratim Das, NEGENTROPIC CURE CENTER (OPC) PRIVATE LIMITED, India

Understanding Science and Engineering of small (fire) arms consolidates information about manufacturing, operation and possible malfunctions of the same. The book overviews the evolution and development process of small arms followed by underlying physics and mechanics. Further, it covers different types of ammunition, design requirement of ammunition and the types of propellant and different types of ballistics in play. Details of the anatomy of a few small arms is explained including their manufacturing, surface treatment, failures and technical specifications. Some present-day firearms in use around the world and some of the modern manufacturing technologies are explained as well.

CRC Press

Market: Mechanics

October 2021: 6.14 x 9.21: 200pp

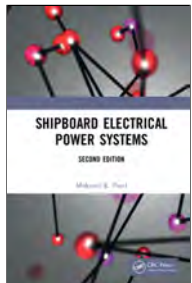
Hb: 978-1-032-05824-5: £100.00

eBook: 978-1-003-19939-7

\* For full contents and more information, visit: [www.routledge.com/9781032058245](http://www.routledge.com/9781032058245)

2nd Edition

## Shipboard Electrical Power Systems



**Mukund R. Patel**, U.S. Merchant Marine Academy, Kings Point, New York, USA

The second edition of Shipboard Electrical Power Systems addresses new developments in this rapidly growing field. Focusing on the industry trend towards electric propulsion for cruise, navy and commercial ships, the book aids new or experienced engineers in mastering the cutting-edge technologies required for power system design, control, protection, and economic use of power.

Covering the latest emission standards on ships, and the clean power technologies necessary to meet such stringent regulations, the book compiles essential information on power system design, analysis and operation, uniquely bringing all

three together under one cover.

CRC Press

**Market:** Engineering-Mechanical

July 2021: 6.14 x 9.21: 428pp

Hb: 978-0-367-43035-1: **£140.00**

eBook: 978-1-003-19151-3

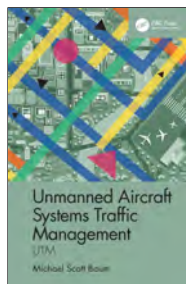
Prev. Ed Hb: 978-1-138-07543-6

\* For full contents and more information, visit: [www.routledge.com/9780367430351](http://www.routledge.com/9780367430351)



## Unmanned Aircraft Systems Traffic Management

UTM



**Michael S. Baum**, Aviators Code Initiative, USA

The book introduces Unmanned Aircraft Systems Traffic Management and explains how it integrates unmanned aircraft operations into a national airspace system for innovative, viable new services. It is an essential, in-depth annotated resource for developers, operators, policy makers, researchers, and academics engaged in unmanned systems, transportation management, and the future of aviation. The book explains how the UTM concept has progressed through research and testing and considers the boundaries of UTM, ATM, and advancing surveillance technologies. It discusses governance challenges and approaches to the approval, management, and oversight of UTM components and ecosystem.

CRC Press

**Market:** Engineering - Aerospace

August 2021: 6.14 x 9.21: 342pp

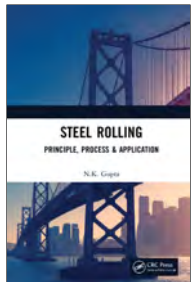
Hb: 978-0-367-64473-4: **£79.99**

eBook: 978-1-003-12468-9

\* For full contents and more information, visit: [www.routledge.com/9780367644734](http://www.routledge.com/9780367644734)

## Steel Rolling

Principle, Process &amp; Application



**N.K. Gupta**

This book covers all aspects and elements of rolling technology. It is exhaustive as topics ranging from rolls, rolls cooling, roll turning, roll reclamation, investigation of roll breakage, roll management and roll bearing all have been dealt in detail. A

separate chapter has been dedicated to operational management of a rolling mill. This book will be a useful tool for shop floor personnel and for all senior management operating in the rolling mill industry. This book may also be useful as reference book for students/professionals of rolling technology.

; Note: T & F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

**Market:** Mechanical Engineering

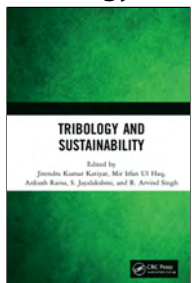
June 2021: 6.14 x 9.21: 526pp

Hb: 978-1-032-02216-1: **£170.00**

eBook: 978-1-003-18239-9

\* For full contents and more information, visit: [www.routledge.com/9781032022161](http://www.routledge.com/9781032022161)

## Tribology and Sustainability



Edited by **Jitendra Kumar Katiyar**, SRM Institute of Science and Technology, Kanchipuram, Tamilnadu, India, **Mir Irfan Ul Haq**, Shri Mata Vaishno Devi University, Jammu and Kashmir, India, **Ankush Raina**, Shri Mata Vaishno Devi University, Jammu and Kashmir, India, **S. Jayalakshmi**, Wenzhou University, Wenzhou, China and **R. Arvind Singh**, Wenzhou University, Wenzhou, China

This book brings two distinct domains together with the vision of promoting greener, cleaner and eco-friendly environment highlighting sustainable solutions in tribology via development of self-lubricating materials, green additives in lubricants, natural fiber reinforced materials and biomimetic approaches. Backed by supporting schematic diagrams, data tables and illustrations

for easy understanding, it focusses on the recent advancements in tribology and sustainability. Global sustainability and regional requirements are addressed chapters on natural composites, green lubricants, biomedical and wind energy systems with a dedicated chapter on Global Sustainability Scenario.

CRC Press

**Market:** Tribology

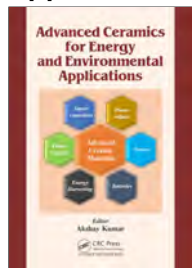
August 2021: 6.14 x 9.21: 442pp

Hb: 978-0-367-55146-9: **£140.00**

eBook: 978-1-003-09216-2

\* For full contents and more information, visit: [www.routledge.com/9780367551469](http://www.routledge.com/9780367551469)

## Advanced Ceramics for Energy and Environmental Applications



Edited by **Akshay Kumar**, Sri Guru Granth Sahib World University, Punjab, India

Advanced Ceramics possess various unique properties and are gifted to withstand harsh environments. The aim of this book is to cover various aspects of the advanced ceramics like carbides, nitrides and oxides for energy and environment related applications. Advanced ceramics with additional functionality propose significant potential for greater impact in the field of energy and environmental technologies. This book is highly focused on the nanostructured ceramics synthesis, properties, structure-property relation and application in the area of energy and environment. It covers the high impact work from around

50 leading researchers throughout the world working in this field.

CRC Press

**Market:** Nanotechnology

November 2021: 7 x 10: 394pp

Hb: 978-0-367-43674-2: **£170.00**

eBook: 978-1-003-00515-5

\* For full contents and more information, visit: [www.routledge.com/9780367436742](http://www.routledge.com/9780367436742)

## Advances in Chromatography

Volume 58

Edited by **Nelu Grinberg** and **Peter W. Carr**, Univ. of Minnesota, Minneapolis, MN.

*Series: Advances in Chromatography*

For six decades, scientists and researchers have relied on the Advances in Chromatography series for the most up-to-date information on a wide range of developments in chromatographic methods and applications. The clear presentation of topics and vivid illustrations for which this series has become known makes the material accessible and engaging to analytical, biochemical, organic, polymer, and pharmaceutical chemists at all levels of technical skill.

CRC Press

**Market:** Chemistry

November 2021: 6.14 x 9.21: 232pp

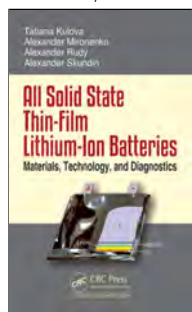
Hb: 978-1-032-11673-0: **£110.00**

eBook: 978-1-003-22340-5

\* For full contents and more information, visit: [www.routledge.com/9781032116730](http://www.routledge.com/9781032116730)

## All Solid State Thin-Film Lithium-Ion Batteries

Materials, Technology, and Diagnostics



**Alexander Skundin**, **Tatiana Kulova**, **Alexander Rudy** and **Alexander Miromemko**

A comprehensive, accessible introduction to modern all-solid-state lithium-ion batteries. All-solid-state thin-film lithium-ion batteries present a special and especially important version of lithium-ion ones. They are intended for battery-powered integrated circuit cards (smart-cards), radio-frequency identifier (RFID) tags, smart watches, implantable medical devices, remote microsensors and transmitters, Internet of things systems, and various other wireless devices including smart building control and so on.

CRC Press

**Market:** Engineering - Industrial & Manufacturing

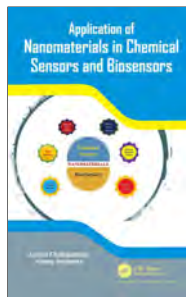
September 2021: 6.14 x 9.21: 214pp

Hb: 978-0-367-08682-4: **£130.00**

eBook: 978-0-429-02373-6

\* For full contents and more information, visit: [www.routledge.com/9780367086824](http://www.routledge.com/9780367086824)

## Application of Nanomaterials in Chemical Sensors and Biosensors



**Jayeeta Chattopadhyay**, Chemistry Dept., Amity University, Jharkhand and **Nimmy Srivastava**

Recent advances in nanotechnology has led the nanomaterials into the realm of sensing applications. This descriptive book utilizes a multi-disciplinary approach to provide extensive information about sensors and elucidates the impact of nanotechnology on development of chemical and biosensors for diversified applications. The main focus of this book is not only the inclusion of various research works, which have already been reported in literature, but also to make a potential conclusion about the mechanism behind this. This book will serve as an invaluable tool for both frontline researchers and academicians to work towards the future development of nanotechnology in sensing devices.

CRC Press

**Market:** Nanoscience & Nanotechnology

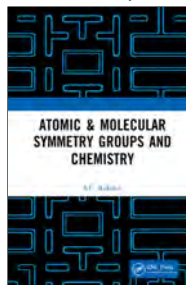
July 2021: 6.14 x 9.21: 174pp

Hb: 978-0-367-44073-2: **£125.00**

eBook: 978-1-003-00908-5

\* For full contents and more information, visit: [www.routledge.com/9780367440732](http://www.routledge.com/9780367440732)

## Atomic & Molecular Symmetry Groups and Chemistry



**S.C. Rakshit**

Atomic Symmetry Groups, being continuous groups, are just a fallout of the Lie Groups and Lie Algebras. Atoms are structurally simpler than molecules but atomic symmetry is more complex than molecular symmetry. In quantum mechanics we study atoms first and then the molecules. In symmetry studies, we do just the reverse. In this book, apart from theories, the description of both the symmetry groups – atomic and molecular, are attended with adequate applications.

Please note: T&F does not sell or distribute the Hardback in South Asia.

CRC Press

**Market:** Chemistry

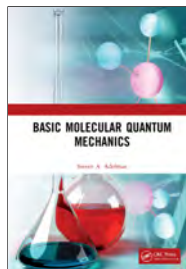
August 2021: 6 x 9: 424pp

Hb: 978-1-032-07531-0: **£170.00**

eBook: 978-1-003-20826-6

\* For full contents and more information, visit: [www.routledge.com/9781032075310](http://www.routledge.com/9781032075310)

## Basic Molecular Quantum Mechanics



**Steven A. Adelman**, Purdue University, Department of Chemistry, West Lafayette, Indiana, USA

This book introduces quantum mechanics by covering the fundamentals of quantum mechanics and some of its most important chemical applications: vibrational and rotational spectroscopy and electronic structure of atoms and molecules. Thoughtfully organized, the author builds up quantum mechanics systematically with each chapter preparing the student for the more advanced chapters and complex applications.

CRC Press

**Market:** Chemistry

August 2021: 7 x 10: 464pp

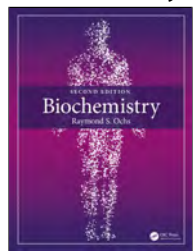
Hb: 978-1-032-01065-6: **£170.00**

Pb: 978-1-498-73399-1: **£68.99**

eBook: 978-0-429-15574-1

\* For full contents and more information, visit: [www.routledge.com/9781032010656](http://www.routledge.com/9781032010656)

2nd Edition

**Biochemistry**

Raymond S. Ochs, St. John's University School of Pharmacy  
Biochemistry Second Edition, is a single-semester text designed for undergraduate non-biochemistry majors. Accessible, engaging, and informative, it is the perfect introduction to the subject for students who may approach chemistry with apprehension. Its unique emphasis on metabolism and its kinetic underpinnings gives the text up-to-the-minute relevance for students investigating current public health concerns such as obesity and diabetes. Biochemistry Second Edition will encourage students to explore the basics of chemistry and its influence on biological problems. It gives a clear list of objectives for each chapter and is an invaluable and user-friendly resource.

CRC Press

Market: Chemistry

August 2021: 8.25 x 11: 512pp

Hb: 978-0-367-46553-7: £246.00

Pb: 978-0-367-46187-4: £99.99

eBook: 978-1-003-02964-9

\* For full contents and more information, visit: [www.routledge.com/9780367465537](http://www.routledge.com/9780367465537)**Biological and Pharmacological Properties of the Genus Moringa**

Edited by J. Basilio Heredia and Erick P. Gutierrez-Grijalva

There is an increasing interest in plants of the *Moringa* genus used as a source of phytochemicals with biopharmaceutical potential, as a functional ingredient in many products and as an additive in poultry feeding stocks. This book is the first publication to comprehensively assess the latest research on *Moringa* studies. This book reviews recent studies covering the botanical, agronomical, genomic, biotechnological, and ethnopharmacological aspects. It presents specialized work in a user-friendly way that will appeal to undergraduates, graduates and researchers primarily in ethnopharmacology, functional foods and with a linkage to veterinary treatments.

CRC Press

Market: Chemistry

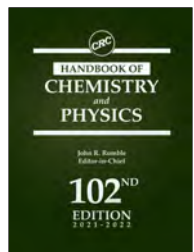
November 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-62140-7: £115.00

eBook: 978-1-003-10886-3

\* For full contents and more information, visit: [www.routledge.com/9780367621407](http://www.routledge.com/9780367621407)

102nd Edition

**CRC Handbook of Chemistry and Physics**

Edited by John Rumble, R&R Data Services, Gaithersburg, MD

Series: *CRC Handbook of Chemistry and Physics*

High Quality Science requires High Quality Data! Today, more than ever, the *CRC Handbook of Chemistry and Physics* is critical in ensuring that researchers, educators, and students have the highest quality data for chemical compounds and physical particles. Available both in print and online, the Handbook covers 390 chemistry, physics, and related subjects organized in easy-to-find, well-organized tables. Every year, new reported data and new scientific areas are added, making the Handbook

the largest comprehensive physical science data source available anywhere.

CRC Press

Market: Chemistry

June 2021: 8.25 x 11: 1624pp

Hb: 978-0-367-71260-0: £170.00

Prev. Ed Hb: 978-0-367-41724-6

\* For full contents and more information, visit: [www.routledge.com/9780367712600](http://www.routledge.com/9780367712600)**Cryogenic Engineering**

Problem Solutions for Applications

Edited by Ernst Wolfgang Stautner and John M. Pfothauer

Given rapid changes in technology and of new product launches, goals and applications in cryogenics have changed over the last decade. In order to keep pace with these new technologies, we need to prepare advanced cryogenic solution strategies. Written by leading experts in the field, this book offers scientists and engineers the latest insights in advanced cryogenics. Covering the basics of advanced cryogenics, this book starts out with a detailed review of the latest technology drivers in the field. It then guides the reader through the landscape of cryogenic material properties and through various approaches to applying these materials efficiently in practical cryogenics designs.

CRC Press

Market: Engineering - Mechanical

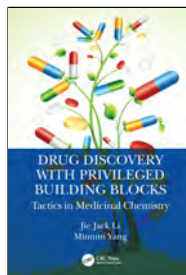
July 2021: 254 x 178: 550pp

Hb: 978-1-138-48394-1: £200.00

eBook: 978-1-351-05345-7

\* For full contents and more information, visit: [www.routledge.com/9781138483941](http://www.routledge.com/9781138483941)**Drug Discovery with Privileged Building Blocks**

Tactics in Medicinal Chemistry



Jie Jack Li, Revolution Medicines, California, USA and Minmin Yang

*Drug Discovery with Privileged Building Blocks* traces back PharmaBlock's founding philosophy of designing privileged building blocks. High-quality building blocks are crucial not only to molecules' biological activities but also to ADMET properties, which eventually will impact the success rate of drug discovery projects. A thorough study of how building blocks perform in drug molecules and regular analysis of new building block structures in the latest researches has proven to be a fruitful strategy to generate novel building blocks. This book will be a good starting point for novice medicinal chemists and veteran medicinal chemists find it useful as well.

CRC Press

Market: Chemistry

August 2021: 7 x 10: 314pp

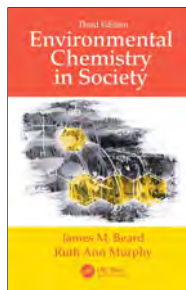
Hb: 978-1-032-04173-5: £170.00

Pb: 978-1-032-04168-1: £68.99

eBook: 978-1-003-19080-6

\* For full contents and more information, visit: [www.routledge.com/9781032041735](http://www.routledge.com/9781032041735)

3rd Edition

**Environmental Chemistry in Society**

James M. Beard, Catawba College, Salisbury, North Carolina, USA and Ruth Ann Murphy

This self-contained text offers all the information necessary for readers to understand the topics surrounding environmental science and the chemistry underlying various issues. It provides a foundation in science, chemistry, and toxicology, including the laws of thermodynamics, chemical bonding, and environmental toxins. This text allows readers to delve into environmental topics, such as energy in society, air quality, global atmospheric concerns, water quality, and solid waste management. The arrangement of the book provides instructors flexibility in how they present the material, with the crucial topics being covered first. This third edition had been updated

throughout.

CRC Press

Market: Chemistry

August 2021: 6.14 x 9.21: 445pp

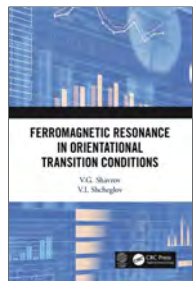
Hb: 978-0-367-31358-6: £185.00

Pb: 978-0-367-31324-1: £74.99

eBook: 978-0-429-31654-8

\* For full contents and more information, visit: [www.routledge.com/9780367313586](http://www.routledge.com/9780367313586)

## Ferromagnetic Resonance in Orientational Transition Conditions



V.G. Shavrov and V.I. Shcheglov

This book explores magnetic resonance and ferromagnetic resonance under a wide variety of conditions to study physical properties of magnetodielectric material. Magnetostatic waves and the phenomena of ferromagnetic resonance in magnetodielectric media impact the creation of highly efficient analog signal-processing devices in the microwave range. As a magnetodielectric medium, films and ferrite plates are typically used, especially iron yttrium garnet (YIG), which has record low magnetic losses. Magnetostatic waves in such media results in numerous and very diverse physical effects. The authors provide a summary of related advances obtained during the last 2 decades.

CRC Press

Market: Spectroscopy

September 2021: 6.14 x 9.21: 650pp

Hb: 978-0-367-49056-0: £190.00

eBook: 978-1-003-04683-7

\* For full contents and more information, visit: [www.routledge.com/9780367490560](http://www.routledge.com/9780367490560)

## Future of Sustainable Agriculture in Saline Environments



Edited by Katarzyna Negacz, Pier Vellinga, Edward Barrett-Lennard, Redouane Choukr-Allah and Theo Elzenga

Food production on present and future saline soils deserves the world's attention particularly because food security is a pressing issue, millions of hectares of degraded soils are available world-wide, fresh water is becoming increasingly scarce, and the global sea-level rise threatens food production in fertile coastal lowlands. *Future of Sustainable Agriculture in Saline Environments* aims to showcase the global potential of saline agriculture. Covering essential topics such as policy and awareness, soil management, future crops and genetic developments all supplemented by case studies that show how this knowledge gets applied.

CRC Press

Market: Chemistry

July 2021: 6.14 x 9.21: 541pp

Hb: 978-0-367-62146-9: £120.00

eBook: 978-1-003-11232-7

\* For full contents and more information, visit: [www.routledge.com/9780367621469](http://www.routledge.com/9780367621469)

## Handbook of Lung Targeted Drug Delivery Systems

Recent Trends and Clinical Evidences

Edited by Yashwant Pathak and Nazrul Islam

*Handbook of Lung Targeted Drug Delivery Systems: Recent Trends and Clinical Evidences* covers every aspect of the drug delivery to lungs, the physiology and pharmacology of the lung, modelling for lung delivery, drug devices focused on lung treatment, regulatory requirements, and recent trends in clinical applications. With the advent of nano sciences and significant development in the nano particulate drug delivery systems there has been a renewed interest in the lung as an absorption surface for various drugs.

CRC Press

Market: Pharmaceutical Science

October 2021: 8.25 x 11: 624pp

Hb: 978-0-367-49067-6: £200.00

eBook: 978-1-003-04654-7

\* For full contents and more information, visit: [www.routledge.com/9780367490676](http://www.routledge.com/9780367490676)

4th Edition

## Handbook of Validation in Pharmaceutical Processes

Edited by James Agalloco, Agalloco & Associates, Belle Mead, New Jersey, USA, Phil DeSantis, Anthony Grilli, FOCUS Scientific Services, LLC, Morris Township, New Jersey, USA and Anthony Pavelli, Fresenius Kabi USA

Revised to reflect significant advances in pharmaceutical production and regulatory expectations, *Handbook of Validation in Pharmaceutical Processes, Fourth Edition* examines and blueprints every step of the validation process needed to remain compliant and competitive. This book blends the use of theoretical knowledge with recent technological advancements to achieve applied practical solutions.

CRC Press

Market: Pharmaceutical Science

October 2021: 8.25 x 11: 1042pp

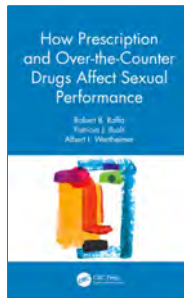
Hb: 978-0-367-75429-7: £190.00

eBook: 978-1-003-16313-8

Prev. Ed Hb: 978-0-849-37055-7

\* For full contents and more information, visit: [www.routledge.com/9780367754297](http://www.routledge.com/9780367754297)

## How Prescription and Over-the-Counter Drugs Affect Sexual Performance



Robert B. Raffa, Patricia J. Bush and Albert I. Wertheimer, College of Pharmacy, Nova Southeastern University, Fort Lauderdale, FL, USA

Most adults take at least one prescription medication for example, for high blood pressure, high cholesterol levels, depression, asthma, diabetes, COPD, or a variety of other reasons, but most people are totally unaware that medications can have direct negative effects on sexual functioning and performance. This informative and timely book written by three well-known medications experts explores the chemistry behind sexual arousal in men and women and clearly and authoritatively explains how the common categories of prescription and over-the-counter medications and abused substances might be the reason for their declining sexual performance or even

interest.

CRC Press

Market: Chemistry

July 2021: 6.14 x 9.21: 140pp

Hb: 978-0-367-49059-1: £94.99

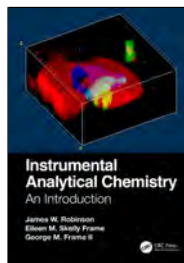
Pb: 978-0-367-49057-7: £38.99

eBook: 978-1-003-04426-0

\* For full contents and more information, visit: [www.routledge.com/9780367490591](http://www.routledge.com/9780367490591)

## Instrumental Analytical Chemistry

An Introduction



James W. Robinson, Louisiana State University, Baton Rouge, USA, Eileen M. Skelly Frame, Rensselaer Polytechnic Institute, Troy, New York, USA and George M. Frame II, New York State Department of Health, Albany, USA

This book is written to teach undergraduate students and those with no analytical chemistry background how contemporary analytical instrumentation works, as well as its uses and limitations. Mathematics is kept to a minimum. No background in calculus, physics, or physical chemistry is required. The major fields of modern instrumentation are covered, including applications of each type of instrumental technique. This text uniquely combines instrumental analysis with organic spectral

interpretation (IR, NMR, and MS). It provides detailed coverage of sampling, sample handling, sample storage, and sample preparation.

CRC Press

Market: Chemistry

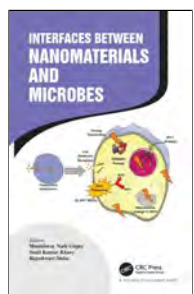
June 2021: 8.25 x 11: 920pp

Hb: 978-1-138-19647-6: £84.99

eBook: 978-1-315-30115-0

\* For full contents and more information, visit: [www.routledge.com/9781138196476](http://www.routledge.com/9781138196476)

## Interfaces Between Nanomaterials and Microbes



Edited by **Munishwar Nath Gupta**, **Sunil Kumar Khare**, Dept of Chemistry, IIT Delhi and **Rajeshwari Sinha**

Nanomaterials are becoming ubiquitous; microbes similarly are everywhere. This book focuses on various ways the diverse nanomaterials interact with microbial communities and implications of such interactions. Both toxicity and beneficial effects of nanomaterial-microbe interactions have been covered. This includes areas such as fate and bioavailability of nanomaterials in environments, microbial synthesis of nanomaterials and antimicrobial action of nanomaterials. Fairly comprehensive but with narrow focus, the book provides useful insights into these interactions which need to be factored in while designing nanoscience based new technologies.

CRC Press

**Market:** Life Sciences

June 2021: 6.14 x 9.21: 300pp

Hb: 978-0-367-27182-4: **£140.00**

eBook: 978-0-429-32126-9

\* For full contents and more information, visit: [www.routledge.com/9780367271824](http://www.routledge.com/9780367271824)

2nd Edition

## Interfacial Chemistry of Rocks and Soils

**Noémi M. Nagy**, University of Debrecen, Hungary and **József Kónya**, University of Debrecen, Hungary

*Series: Surfactant Science*

Knowledge of the basic interactions that take place between geological materials and different substances is the first step in understanding the effects of adsorption and other interfacial processes on the quality of rocks and soils, and on driving these processes towards a beneficial or neutral result. The authors examine the different processes at solid and liquid interfaces of soil and rock, presenting a complete analysis that emphasizes the importance of chemical species on these interactions. The role of these processes in environmental, colloid and geochemistry; and the effects on agricultural, environmental and industrial applications are explored.

CRC Press

**Market:** Geochemistry/Soil Science

October 2021: 6.14 x 9.21: 264pp

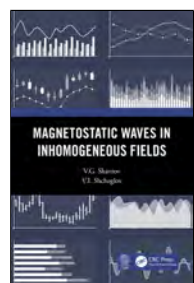
Hb: 978-0-367-85682-3: **£120.00**

eBook: 978-1-003-02008-0

Prev. Ed Hb: 978-1-420-09132-8

\* For full contents and more information, visit: [www.routledge.com/9780367856823](http://www.routledge.com/9780367856823)

## Magnetostatic Waves in Inhomogeneous Fields



**V.G. Shavrov** and **V.I. Shcheglov**

This reference examines magnetostatic waves and their distribution in non-uniformly magnetized films and structures. The propagation of magnetostatic waves in magnetodielectric environments is accompanied by numerous and very diverse physical effects, sharply distinguishing them from ordinary electromagnetic waves in isotropic media. The authors address dispersion properties, noncollinearity of phase and group velocity vectors, as well as non-reciprocal propagation. The work will be of interest to researchers working on high-performance analog information processing devices including filters, delay lines, phase shifters, frequency converters, non-reciprocal and non-linear devices.

CRC Press

**Market:** Physics

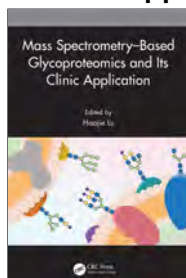
September 2021: 6.14 x 9.21: 416pp

Hb: 978-0-367-49447-6: **£170.00**

eBook: 978-1-003-04622-6

\* For full contents and more information, visit: [www.routledge.com/9780367494476](http://www.routledge.com/9780367494476)

## Mass Spectrometry–Based Glycoproteomics and Its Clinic Application



Edited by **Haojie Lu**

This book demonstrates the progress that has been achieved in Mass spectrometry based glycoproteomic analysis, including a wide range of analytical methodologies and strategies involved in selective enrichment, qualitative analysis, quantitative analysis and data analysis, together with their clinical applications. The book will serve as a valuable resource to aid appropriate techniques and their applications for students, postdocs, and researchers working in proteomics, glycoscience, analytical chemistry, biochemistry and clinical medicine.

CRC Press

**Market:** Chemistry, Bioscience, Biology analysis

August 2021: 6 x 9: 280pp

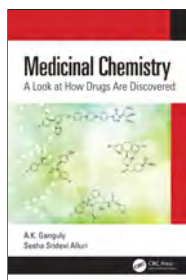
Hb: 978-1-032-02861-3: **£150.00**

eBook: 978-1-003-18583-3

\* For full contents and more information, visit: [www.routledge.com/9781032028613](http://www.routledge.com/9781032028613)

## Medicinal Chemistry

A Look at How Drugs Are Discovered



**A.K. Ganguly** and **Sesha Sridevi Alluri**

This book on Medicinal Chemistry is written for those who are interested in learning how drugs are discovered. Compared to other books on the market, this text takes a different approach, by presenting the subject on chemical reaction mechanisms terms, which ideally makes the subject matter more interesting and easier to comprehend. The book describes the drug discovery process, from advancing an initial lead to the approval process, and also includes sources from where drugs are discovered. This short and easy to follow book will be useful for upper level undergraduates and graduates, as well as scientists who are working in the pharmaceutical industries.

CRC Press

**Market:** Chemistry

September 2021: 6.14 x 9.21: 128pp

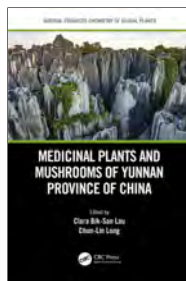
Hb: 978-1-032-02253-6: **£120.00**

Pb: 978-1-032-01753-2: **£48.99**

eBook: 978-1-003-18257-3

\* For full contents and more information, visit: [www.routledge.com/9781032022536](http://www.routledge.com/9781032022536)

## Medicinal Plants and Mushrooms of Yunnan Province of China



Edited by **Clara Bik-San Lau** and **Chun-lin Long**

*Series: Natural Products Chemistry of Global Plants*

Although many texts describe plants from China, the focus of this book is drawing on the rich culture and environment of medicinal plants and fungi/mushrooms of the Yunnan Province. This province in China is famous for the valuable resources and diversity of plants and fungi/mushrooms. In particular, The Kunming Institute of Botany plays an important role and is a highly regarded research institute, directly affiliated to the Chinese Academy of Sciences and dedicated to research in the fields of botany and phytochemistry. To summarise, this book covers those medicinal plants and fungi/mushrooms specific to Yunnan Province, and is written by various experts in this

research field.

CRC Press

**Market:** Chemistry

June 2021: 6.14 x 9.21: 322pp

Hb: 978-0-367-89801-4: **£250.00**

Pb: 978-1-032-02338-0: **£99.99**

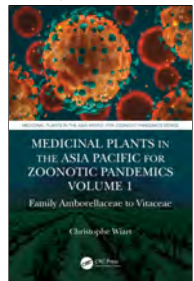
eBook: 978-1-003-02277-0

\* For full contents and more information, visit: [www.routledge.com/9780367898014](http://www.routledge.com/9780367898014)



## Medicinal Plants in the Asia Pacific for Zoonotic Pandemics, Volume 1

Family Amborellaceae to Vitaceae



Christophe Wiart, University of Nottingham, Malaysia Campus.

Series: *Medicinal Plants in the Asia Pacific for Zoonotic Pandemics*

*Medicinal Plants in the Asia Pacific for Zoonotic Pandemics* provides an unprecedented comprehensive overview of the phylogeny, botany, ethnopharmacology, and pharmacology of more than 100 plants used in the traditional systems of Asia and Pacific medicine.

*Medicinal Plants in the Asia Pacific for Zoonotic Pandemics* presents commentary sections that invite further research and reflection on the fascinating and timely subject of the

development of leads or herbals from Asia-Pacific medicinal plants to safeguard humanity and other life forms against the forthcoming waves of viral, bacterial, or fungal pandemics. This is an ideal reference text for medicinal plant enthusiasts.

CRC Press

Market: Pharmaceutical Science

June 2021: 7 x 10: 423pp

Hb: 978-1-032-00265-1: £224.99

Pb: 978-1-138-48204-3: £89.99

eBook: 978-1-351-05907-7

\* For full contents and more information, visit: [www.routledge.com/9781032002651](http://www.routledge.com/9781032002651)

## Medicinal Plants in the Asia Pacific for Zoonotic Pandemics, Volume 2

Family Zygophyllaceae to Muntingiaceae

Christophe Wiart, University of Nottingham, Malaysia Campus.

Series: *Medicinal Plants in the Asia Pacific for Zoonotic Pandemics*

*Medicinal Plants in the Asia Pacific for Zoonotic Pandemics* provides an unprecedented comprehensive overview of the botany, ethnopharmacology and pharmacology of over 100 plants used in the traditional medical systems of Asia and Pacific medicine for the treatment of microbial infections. It discusses their actions and potentials against viruses, bacteria, and fungi representing a threat of epidemic and pandemic diseases, with an emphasis on the molecular basis and cellular pathways. This volume is a critical reference for anyone involved in the development of lead molecules or phytopharmaceutical products for the prevention or treatment of pandemic viral, bacterial, or fungal infections.

CRC Press

Market: Chemistry

September 2021: 7 x 10: 356pp

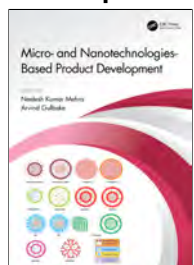
Hb: 978-1-032-00928-5: £225.00

Pb: 978-1-032-00536-2: £90.00

eBook: 978-1-003-17639-8

\* For full contents and more information, visit: [www.routledge.com/9781032009285](http://www.routledge.com/9781032009285)

## Micro- and Nanotechnologies-Based Product Development



Edited by Neelesh Kumar Mehra, Sentiss Pharma Pvt Ltd, India and Arvind Gulbake

This book provides comprehensive information of the nanotechnological based pharmaceutical product development including diverse range of arena liposome, nanoparticles, fullerenes, hydrogels, Thermally responsive externally activated theranostics (TREAT), hydrogel, microspheres, micro- and nanoemulsion, carbon nanomaterials and so on. We cover the micro- and nano-technological aspects for pharmaceutical product development with product development point of view and it covers the industrial aspects, novel technologies, stability studies, validation, safety and toxicity profiles, regulatory perspectives, scale up technologies and fundamental concept in development of product.

CRC Press

Market: Biomedical Science

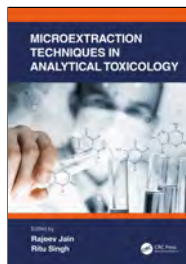
September 2021: 8.25 x 11: 326pp

Hb: 978-0-367-48845-1: £155.00

eBook: 978-1-003-04316-4

\* For full contents and more information, visit: [www.routledge.com/9780367488451](http://www.routledge.com/9780367488451)

## Microextraction Techniques in Analytical Toxicology



Edited by Rajeev Jain, Central Forensic Science Laboratory, India and Ritu Singh, Central University of Rajasthan, India

*Microextraction techniques in analytical toxicology* provides the information readers need to include about cutting-edge sample preparation techniques into their everyday analytical practice, including comprehensive information about principle and state-of-art on microextraction sample preparation techniques for analysis of drugs and poisons in biological specimens especially in forensic and clinical settings.

CRC Press

Market: Chemistry

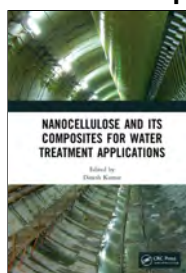
November 2021: 7 x 10: 280pp

Hb: 978-0-367-65194-7: £90.00

eBook: 978-1-003-12829-8

\* For full contents and more information, visit: [www.routledge.com/9780367651947](http://www.routledge.com/9780367651947)

## Nanocellulose and Its Composites for Water Treatment Applications



Edited by Dinesh Kumar, Central University of Gujarat, India

*Nanocellulose and Its Composites for Water Treatment Application*, first edition supplies insight into the application of nanocellulose and its nanocomposites for water purification and remediation. It covers different classes of nanocellulose—cellulose nanocrystal (CNC), microfibrillated cellulose (MFC), hairy cellulose nanocrystalloid (HCNC) and bacterial nanocellulose (BNC), for their competency with other renewable and carbonaceous materials like pectin, alginate, CNTs. Future perspectives of nanocellulose, and nanocomposites obtained from different biodegradable origins are also discussed.

CRC Press

Market: Chemistry

July 2021: 7 x 10: 230pp

Hb: 978-0-367-48733-1: £115.00

eBook: 978-1-003-04255-6

\* For full contents and more information, visit: [www.routledge.com/9780367487331](http://www.routledge.com/9780367487331)

## Nanostructured Multifunctional Materials

Synthesis, Characterization, Applications and Computational Simulation



Edited by Esteban A. Franceschini

This book provides a broad overview of the effect of nanostructuring in the multifunctionality of different widely studied nanomaterials. This book is divided into four sections constituting a road map that groups materials sharing certain types of nanostructuring, including nanoporous, nanoparticled, 2D laminar nanomaterials, and computational methods for characterizations of nanostructures. This structured approach in nanomaterials research will serve as a valuable reference material for chemists, (bio)engineers, physicists, nanotechnologists, undergraduates, and professors.

CRC Press

Market: Science Publisher

June 2021: 7 x 10: 322pp

Hb: 978-0-367-42069-7: £155.00

eBook: 978-0-367-82219-4

\* For full contents and more information, visit: [www.routledge.com/9780367420697](http://www.routledge.com/9780367420697)

## Natural Products Chemistry of Botanical Medicines from Cameroonian Plants

Edited by **Xavier Siwe-Noundou**, Rhodes University, Grahamstown, South Africa  
*Series: Natural Products Chemistry of Global Plants*

Part of the Natural Products Chemistry of Global Plants series, *Natural Products Chemistry of Botanical Medicines from Cameroon* focuses on the sources and chemistry of natural products from plants in Cameroon, West Africa. The plants selected offer an opportunity to trace a route through history from ancient civilizations to the modern day, showing the important value to man of natural products in medicines and in foods. This book highlights how many of the extracts from Cameroon are today associated with important drugs, nutrition products, beverages, perfumes, cosmetics and pigments, as well as their complex chemistry and structure.

CRC Press

**Market:** Chemistry

September 2021: 6.14 x 9.21: 226pp

Hb: 978-1-032-06476-5: **£182.99**

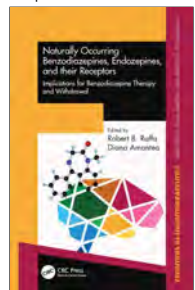
Pb: 978-1-138-58142-5: **£74.99**

eBook: 978-0-429-50673-4

\* For full contents and more information, visit: [www.routledge.com/9781032064765](http://www.routledge.com/9781032064765)

## Naturally Occurring Benzodiazepines, Endozepines, and their Receptors

Implications for Benzodiazepine Therapy and Withdrawal



Edited by **Robert B. Raffa** and **Diana Amantea**

*Series: Frontiers in Neurotherapeutics Series*

*Naturally Occurring Benzodiazepines, Endozepines, and their Receptors: Implications for Benzodiazepine Therapy and Withdrawal* raises important questions about the clinical consequences of ignoring the existence of or understanding the potential influence of endogenous benzodiazepines on the therapeutic effect of benzodiazepines, their adverse effects, and the problems of withdrawal from them and other benzodiazepine receptor agonists.

CRC Press

August 2021: 6.14 x 9.21: 214pp

Hb: 978-1-032-04310-4: **£149.99**

Pb: 978-0-367-40906-7: **£59.99**

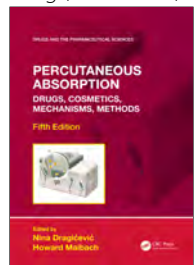
eBook: 978-0-367-81437-3

\* For full contents and more information, visit: [www.routledge.com/9781032043104](http://www.routledge.com/9781032043104)

5th Edition

## Percutaneous Absorption

Drugs, Cosmetics, Mechanisms, Methods



Edited by **Nina Dragičević**, Apoteka "Beograd", Belgrade, Serbia and **Howard Maibach**

*Series: Drugs and the Pharmaceutical Sciences*

Updating and expanding the scope of topics covered in the previous edition, *Percutaneous Absorption: Drugs, Cosmetics, Mechanisms, Methods Fifth edition* supplies new chapters on topics currently impacting the field including cutaneous metabolism, skin contamination, exposure to protein allergens, in vitro absorption methodology and the percutaneous absorption of chemical mixtures. Complete with studies on the role of the skin as a key portal of entry for chemicals into the body this book serves as a detailed reference source for recent advances in the field, as well as an experimental guide for laboratory personnel.

CRC Press

**Market:** Pharmaceutical Science

July 2021: 7 x 10: 1008pp

Hb: 978-1-138-35123-3: **£190.00**

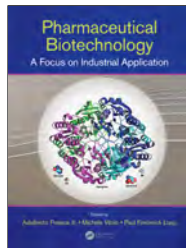
eBook: 978-0-429-20297-1

Prev. Ed Hb: 978-1-574-44869-6

\* For full contents and more information, visit: [www.routledge.com/9781138351233](http://www.routledge.com/9781138351233)

## Pharmaceutical Biotechnology

A Focus on Industrial Application



Edited by **Adalberto Pessoa**, University of Sao Paulo, Brazil, **Michele Vitolo**, University of Sao Paulo, Brazil and **Paul Frederick Long**, King's College London, United Kingdom

*Pharmaceutical Biotechnology* covers the development of new biopharmaceuticals as well as the improvement of those being produced. The main purpose is to provide background and concepts related to Pharmaceutical Biotechnology, together with an industrial perspective. This is a comprehensive text for undergraduates, graduates and academics in biochemistry, pharmacology and biopharmaceutics, as well as professionals working on the interdisciplinary field of pharmaceutical biotechnology. Written with teaching in mind, this book allows teachers to have an easier time preparing their classes and providing students with a fluid and easy to read text.

CRC Press

**Market:** Chemistry

July 2021: 8 x 10: 400pp

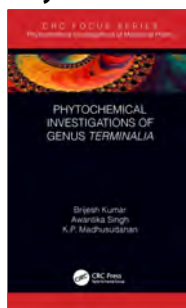
Hb: 978-1-032-01374-9: **£275.00**

Pb: 978-1-032-00606-2: **£110.00**

eBook: 978-1-003-17836-1

\* For full contents and more information, visit: [www.routledge.com/9781032013749](http://www.routledge.com/9781032013749)

## Phytochemical Investigations of Genus Terminalia



**Brijesh Kumar**, Central Drug Research, India, **Awantika Singh**, CSIR-Central Drug Research Inst, India and **K. P. Madhusudan**

*Series: Phytochemical Investigations of Medicinal Plants*

Genus *Terminalia* is known to be a rich source of secondary metabolites, mainly polyphenols and triterpenoids. About 39 species have been phytochemically studied leading to the identification of 368 compounds. This work involves the use of hyphenated mass spectrometric methods such as HPLC-ESI-QTOF-MS/MS and UPLC-ESI-QqQLIT-MS/MS for qualitative and quantitative analysis of major bioactive constituents in selected medicinal plants without isolation. It also describes the methods of mass fingerprinting and their use to investigate the plant species variations with the help of statistical software's (PCA). Markers were identified for quality control and authentications.

CRC Press

**Market:** Chemistry

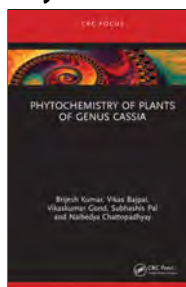
July 2021: 5.5 x 8.5: 154pp

Hb: 978-1-032-01948-2: **£44.99**

eBook: 978-1-003-18112-5

\* For full contents and more information, visit: [www.routledge.com/9781032019482](http://www.routledge.com/9781032019482)

## Phytochemistry of Plants of Genus Cassia



**Brijesh Kumar**, Central Drug Research, India, **Vikas Bajpai**, **Vikaskumar Gond**, **Subhashis Pal** and **Naibedya Chattopadhyay**

*Series: Phytochemical Investigations of Medicinal Plants*

*Cassia* is an indigenous plant in Africa, Latin America, Northern Australia and Southeast Asia. Several *Cassia* species are of high commercial and medicinal significance since they are used as spices and in traditional medicines. Currently plants from genus *Cassia* is in great demand due to their immense medicinal properties. *Cassia* species have various pharmacological activities such as antibacterial, analgesic, anti-inflammatory, antiarthritic, hepatoprotective, antitumor, antifertility, antifungal, antioxidant, antileishmaniac, antimicrobial, CNS and hypoglycaemic activity.

CRC Press

**Market:** Chemistry

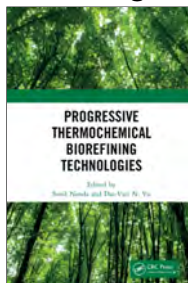
August 2021: 5.5 x 8.5: 104pp

Hb: 978-1-032-03021-0: **£44.99**

eBook: 978-1-003-18628-1

\* For full contents and more information, visit: [www.routledge.com/9781032030210](http://www.routledge.com/9781032030210)

## Progressive Thermochemical Biorefining Technologies



Edited by **Sonil Nanda** and **Dai-Viet N. Vo**

Considering the deleterious impacts of fossil fuels on the environmental and natural ecosystems, it has become imperative to make a paradigm shift towards renewable fuels, chemicals and materials. The exhaustive everyday usage of fossil fuels and processed petrochemical products are the leading cause for the increase in greenhouse gas emissions, global warming, climate changes, acid rain, ozone layer depletion, pollution of air, water and soil as well as accumulation of non-biodegradable materials in the soil and oceans.

CRC Press

Market: Chemistry

August 2021: 7 x 10: 216pp

Hb: 978-0-367-56609-8: **£110.00**

eBook: 978-1-003-09859-1

\* For full contents and more information, visit: [www.routledge.com/9780367566098](http://www.routledge.com/9780367566098)

## Quantum Information Processing with Light

Debabrata Goswami and Sonaly Goswami

Quantum cryptography, for example, has already evolved to marketable devices. Most of the books on quantum information and/or quantum computing address the important aspect of optical implementation only briefly. This book solves that by focusing on all light-based approaches to quantum computing.

CRC Press

December 2021: 6.14 x 9.21: 432pp

Hb: 978-1-466-58399-3: **£170.00**

\* For full contents and more information, visit: [www.routledge.com/9781466583993](http://www.routledge.com/9781466583993)

## Rapid Review of Chemistry for the Life Sciences and Engineering

With Select Applications

**Armen S. Casparian**, Community College of Rhode Island, USA, **Gergely Sirokman**, Wentworth Institute of Technology, USA and **Ann Omollo**, Community College of Rhode Island, Warwick, USA

To understand, maintain, and protect the physical environment, a basic understanding of chemistry, biology, and physics, and their hybrids is useful. *Rapid Review of Chemistry for the Life Sciences and Engineering* demystifies chemistry for the non-chemist who, nevertheless, may be a practitioner of some area of science or engineering requiring or involving chemistry. It provides quick and easy access to fundamental chemical principles, quantitative relationships, and formulas.

CRC Press

Market: Chemistry

October 2021: 6.14 x 9.21: 272pp

Hb: 978-0-367-54166-8: **£100.00**

eBook: 978-1-003-09275-9

\* For full contents and more information, visit: [www.routledge.com/9780367541668](http://www.routledge.com/9780367541668)

## Recent Advances in the Science of Cannabis

Edited by **Robert M. Strongin**, Portland State University, Oregon, USA, **Jiries Meehan-Atrash**, Portland State University, Oregon, USA and **Monica Vialpando**

*Recent Advances in the Science of Cannabis* describes progress in a variety of significant areas of cannabis science. This unique book covers topics in cultivation and secondary metabolites, aroma and chemotypes, cannabinoid structures, physiology and pharmacology, as well as the development of unique topical products. State-of-the-art analytical methods and instrumentation are covered, including current developments in mass spectrometry and chromatography, as well as microbial testing. Given the popularity of smoking and vaporizing cannabis, the chemistry of vaping cannabinoid and terpene concentrates is also presented, along with emerging regulatory issues.

CRC Press

Market: Chemistry

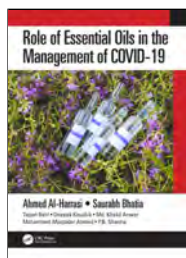
November 2021: 6.14 x 9.21: 296pp

Hb: 978-0-367-22442-4: **£110.00**

eBook: 978-0-429-27489-3

\* For full contents and more information, visit: [www.routledge.com/9780367224424](http://www.routledge.com/9780367224424)

## Role of Essential Oils in the Management of COVID-19



**Ahmed Al-Harrasi**, **Saurabh Bhatia**, University of Nizwa, Oman, **Tapan Behl**, **Deepak Kaushik**, **Md. Khalid Anwer**, **Mohammed Muqtader Ahmed**, **P.B. Sharma**, **Md. Tanvir Kabir**, **Vineet Mittal** and **Ajay Sharma**

*Role of essential oil in the management of COVID-19* elaborates a complete outline of recent novel coronavirus (SARS-CoV-2) infection, their biology and associated challenges for their treatment and prevention of novel Coronavirus Disease 2019 (COVID-19) with a prime focus on the possible role of essential oils in the prevention and treatment of COVID-19. Book is written for everyone who needs to be thoroughly familiar with the appropriate and safe use of essential oils in COVID 19 therapy.

CRC Press

Market: Life Science

November 2021: 8.25 x 11: 448pp

Hb: 978-1-032-00817-2: **£130.00**

eBook: 978-1-003-17593-3

\* For full contents and more information, visit: [www.routledge.com/9781032008172](http://www.routledge.com/9781032008172)

## $\beta$ -Carbolines

A Privileged Scaffold for Modern Drug Discovery

**K.L. Ameta, Ph.D.**, Mody University of Science and Technology, Rajasthan, India and **Khan Shahnawaz**, Assistant Professor, Department of Chemistry, BHUPAL NOBLES' UNIVERSITY Maharana Pratap Station

$\beta$ -Carboline and its derivatives have generated considerable interest in recent years for their versatile properties in chemistry and pharmacology. This is due to their ability to act as agonists to benzodiazepine receptors, hydroxy serotonin receptors, and intercalate into DNA, to inhibit CDK, Topoisomerase, and monoamine oxidase enzymes. Their pharmacological properties include anxiolytic, hypnotic, anticonvulsant, antiviral, antiparasitic and antimicrobial attributes. This book provides a summary of methods for the synthesis of various natural products engineered with the diverse  $\beta$ -carboline scaffold and their biological evaluation.

CRC Press

Market: Chemistry

May 2021: 235 x 156: 350pp

Hb: 978-1-138-48238-8: **£125.00**

eBook: 978-1-351-05803-2

\* For full contents and more information, visit: [www.routledge.com/9781138482388](http://www.routledge.com/9781138482388)

## The Future of Pharmaceuticals

A Nonlinear Analysis

Sarfraz K. Niazi, Therapeutic Proteins International, LLC, Chicago, Illinois, USA

The concepts and techniques of nonlinear analysis allow for more realistic and accurate models in science. *The Future of Pharmaceuticals: A Nonlinear Analysis* provides an opportunity to understand the non-linearity of biological systems and its application in various areas of science, primarily pharmaceutical sciences. This book will benefit professionals in pharmaceutical industries, academia, and policy who are interested in an entirely new approach to how we will treat disease in the future.

CRC Press

**Market:** Pharmaceutical Science

October 2021: 7 x 10: 568pp

Hb: 978-0-367-70564-0: £250.00

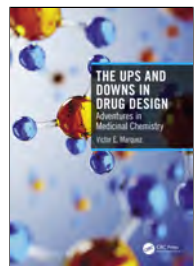
Pb: 978-0-367-70139-0: £100.00

eBook: 978-1-003-14693-3

\* For full contents and more information, visit: [www.routledge.com/9780367705640](http://www.routledge.com/9780367705640)

## The Ups and Downs in Drug Design

Adventures in Medicinal Chemistry



Victor E. Marquez, Scientist Emeritus, National Cancer Institute, NIH, USA

*The Ups and Downs in Drug Design: Adventures in Medicinal Chemistry* highlights the necessity for an integrative approach in Medicinal Chemistry and Chemical Biology. As Medicinal Chemistry is not a monolithic science, it is important to emphasize the other various disciplines that are required for successful drug design. This book presents the authors' own personal experience in this field and describes the "ups" and "downs" that come with drug discovery. This book is an excellent companion text for graduate and postgraduate students who would like further insight into the parameters of drug design,

including the challenges that come with the project.

CRC Press

**Market:** Chemistry

November 2021: 7 x 10: 464pp

Hb: 978-1-032-06710-0: £250.00

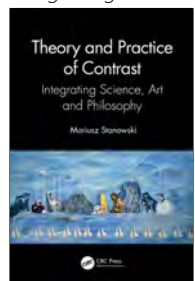
Pb: 978-1-032-06363-8: £100.00

eBook: 978-1-003-20350-6

\* For full contents and more information, visit: [www.routledge.com/9781032067100](http://www.routledge.com/9781032067100)

## Theory and Practice of Contrast

Integrating Science, Art and Philosophy



Mariusz Stanowski

The book *Theory and Practice of Contrast* completes, corrects and integrates the foundations of science and humanities, which include: theory of art, philosophy (aesthetics, epistemology, ontology, axiology), cognitive science, theory of information, theory of complexity and physics. Through the integration of these distant disciplines, many unresolved issues in contemporary science have been clarified or better understood, among others: defining impact (contrast) and using this definition in different fields of knowledge; understanding what beauty/art is and what our aesthetic preferences depend on.

CRC Press

**Market:** Chemistry

June 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-77002-0: £90.00

eBook: 978-1-003-17138-6

\* For full contents and more information, visit: [www.routledge.com/9780367770020](http://www.routledge.com/9780367770020)

## Translational Medicine

Optimizing Preclinical Safety Evaluation of Biopharmaceuticals

Edited by Joy Cavagnaro and Mary Ellen Cosenza, MEC Regulatory & Toxicology Consulting, LLC

*Translational Medicine: Optimizing Preclinical Safety Evaluation of Biopharmaceuticals* provides scientists responsible for the translation of novel biopharmaceuticals into clinical trials with a better understanding of how to navigate the obstacles that keep innovative medical research discoveries from becoming new therapies or even making it to clinical trials. Best practices are defined for efficient discovery research to facilitate a science-based, efficient and predictive preclinical development program to ensure clinical efficacy and safety.

CRC Press

**Market:** Pharmaceutical Science

November 2021: 8.25 x 11: 480pp

Hb: 978-0-367-64427-7: £150.00

eBook: 978-1-003-12454-2

\* For full contents and more information, visit: [www.routledge.com/9780367644277](http://www.routledge.com/9780367644277)

## Wood Modification Technologies

Principles, Sustainability, and the Need for Innovation



Dick Sandberg, Chaired Professor of Wood Science & Engineering, Luleå University of Technology, Sweden, Andreja Kutnar, InnoRenew CoE, Slovenia, Olov Karlsson and Dennis Jones

The aim of this book is to put together the key elements of the changes of wood constituents and the related changes in wood properties of modified wood. Further, a selection of the principal technologies implemented in wood modification are presented. This work is intended for researchers, professionals of timber construction, as well as students studying the science of materials, civil engineering and architecture. This work is not exhaustive or a reference, but intends to deliver an outline of the scientific disciplines necessary to apprehend the technologies of wood modification and its behavior during treatment, as well as during its use.

CRC Press

**Market:** Chemistry

July 2021: 7 x 10: 442pp

Hb: 978-1-138-49177-9: £155.00

eBook: 978-1-351-02822-6

\* For full contents and more information, visit: [www.routledge.com/9781138491779](http://www.routledge.com/9781138491779)

## A Simple Guide to Technology and Analytics

Brian J. Evans, Curtin University, Australia

Richly furnished with over 200 illustrations, photos and with minimal equations, *A Simple Guide to Technology and Analytics* is a ready reference book for those times when you don't really understand the technology and analytics being talked about. It explains complicated topics such as automated character recognition in a very simple way, and has simple exercises for the reader to fully understand the technology (with answers at the back). It even has explanations on how home appliances work, which are very useful the next time you go shopping for a microwave or TV.

Chapman and Hall/CRC

**Market:** Computer Science

September 2021: 7 x 10: 320pp

Hb: 978-0-367-60861-3: **£59.99**

eBook: 978-1-003-10844-3

\* For full contents and more information, visit: [www.routledge.com/9780367608613](http://www.routledge.com/9780367608613)

## Advanced AI Techniques and Applications in Bioinformatics



Edited by **Loveleen Gaur**, Amity University, Noida, India, **Arun Solanki**, Gautam Buddha University, Greater Noida, India, **Samuel Fosso Wamba** and **Noor Zaman Jhanjhi**, Taylors University, Malaysia

*Series: Smart and Intelligent Computing in Engineering*

The advanced AI techniques are essential for resolving various problematic aspects emerging in the field of bioinformatics. This book covers the recent approaches in artificial intelligence and machine learning methods and their applications in Genome and Gene editing, cancer drug discovery classification, and the protein folding algorithms among others. Deep learning, which is widely used in image processing, is also applicable in

bioinformatics as one of the most popular artificial intelligence approaches.

CRC Press

**Market:** Bioinformatics / Artificial Intelligence

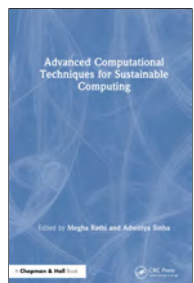
October 2021: 6.14 x 9.21: 296pp

Hb: 978-0-367-64169-6: **£110.00**

eBook: 978-1-003-12616-4

\* For full contents and more information, visit: [www.routledge.com/9780367641696](http://www.routledge.com/9780367641696)

## Advanced Computational Techniques for Sustainable Computing



Edited by **Megha Rathi**, IIIT, Noida and **Adwitiya Sinha**, IIIT, Noida

Advanced Computational Techniques for Sustainable Computing is considered multi-disciplinary field encompassing advanced computational techniques across several domain, including, Computer Science, Statistical Computation and Electronics Engineering. The core idea of sustainable computing is to deploy algorithms, models, policies and protocols to improve energy efficiency and management of resources, enhancing ecological balance, biological sustenance and other services on societal contexts. The content of the book demonstrates the usage of data science and the internet of things for the advent of smart and realistic solutions for attaining sustainability.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

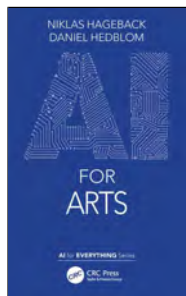
October 2021: 7 x 10: 336pp

Hb: 978-0-367-49522-0: **£140.00**

eBook: 978-1-003-04643-1

\* For full contents and more information, visit: [www.routledge.com/9780367495220](http://www.routledge.com/9780367495220)

## AI for Arts



**Niklas Hageback**, The Virtual Mind, Sweden and **Daniel Hedblom**

*Series: AI for Everything*

*AI for Arts* is for anyone fascinated by the man-machine connect, an unstoppable evolution that is intertwining us with technology in an ever-greater degree, and where there is an increasing concern that it will be technology that comes out on top. This book aims to fill a gap that will have repercussions not only for the aesthetic and philosophical considerations but possibly for the development of artificial intelligence.

CRC Press

**Market:** Artificial Intelligence

August 2021: 5.06 x 7.81: 104pp

Hb: 978-1-032-04881-9: **£56.99**

Pb: 978-1-032-04880-2: **£14.99**

eBook: 978-1-003-19500-9

\* For full contents and more information, visit: [www.routledge.com/9781032048819](http://www.routledge.com/9781032048819)

## AI for Cars



**Josep Aulinas** and **Hanky Sjafrie**, SGEN, Munich, Germany

*Series: AI for Everything*

Artificial Intelligence (AI) is undoubtedly playing an increasingly significant role in automobile technology.

*AI for Cars* book provides a short-guided tour through many different AI landscapes including robotics, image and speech processing, recommender systems and on to deep learning, all within the automobile world. From pedestrian detection to driver monitoring to recommendation engines, the book discusses the background, research and progress thousands of talented engineers and researchers have achieved thus far, and their plans to deploy this life-saving technology all over the world.

Chapman and Hall/CRC

**Market:** Artificial Intelligence

July 2021: 5.06 x 7.81: 112pp

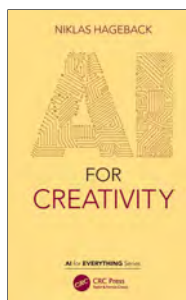
Hb: 978-0-367-56830-6: **£56.99**

Pb: 978-0-367-56519-0: **£14.99**

eBook: 978-1-003-09951-2

\* For full contents and more information, visit: [www.routledge.com/9780367568306](http://www.routledge.com/9780367568306)

## AI for Creativity



**Niklas Hageback**, The Virtual Mind, Sweden

*Series: AI for Everything*

One of the human mind's most valuable feature is the capacity to formulate creative thoughts, an ability that through quantum leap innovations has propelled us to the current digital age. However, creative breakthroughs are easier said than done, appearing less frequent and more sporadic than desired, it seems that we have not yet fully cracked the creative code. *AI for Creativity* provides a fascinating read of what is currently emerging in the very cutting edge area of artificial intelligence and the tools being developed to enable computational creativity that hold the propensity to dramatically change our lives.

CRC Press

**Market:** Artificial Intelligence

September 2021: 5.06 x 7.81: 106pp

Hb: 978-1-032-04867-3: **£56.99**

Pb: 978-1-032-04775-1: **£14.99**

eBook: 978-1-003-19494-1

\* For full contents and more information, visit: [www.routledge.com/9781032048673](http://www.routledge.com/9781032048673)

## AI for Death and Dying



Maggi Savin-Baden, University of Worcester

Series: *AI for Everything*

What is artificial intelligence? How does AI affect death matters and the digital beyond? How are death and dying handled in our digital age?

*AI for Dying and Death* covers a broad range of literature, research, and challenges around this topic. It explores ethical memorisation, digital legacies and bereavement, post death avatars, and AI and the digital beyond. It also analyzes religious perspectives on AI for death and dying, and planning for death in a digital age.

CRC Press

Market: Artificial Intelligence

August 2021: 5.06 x 7.81: 220pp

Hb: 978-0-367-62244-2: **£56.99**

Pb: 978-0-367-61317-4: **£14.99**

eBook: 978-1-003-10850-4

\* For full contents and more information, visit: [www.routledge.com/9780367622442](http://www.routledge.com/9780367622442)

## AI for Digital Warfare



Niklas Hageback, The Virtual Mind, Sweden and Daniel Hedblom

Series: *AI for Everything*

What is artificial intelligence? What can artificial intelligence do for warfare? What do I need to know about AI for warfare?

*AI for Digital Warfare* explores how the weaponizing of artificial intelligence can and will change how warfare is being conducted, and what impact it will have on the corporate world. With artificial intelligence tools becoming increasingly advanced, and in many cases more humanlike, their potential in psychological warfare are being recognized, which means digital warfare can move beyond just shutting down IT systems into more all-encompassing hybrid war strategies.

CRC Press

Market: Artificial Intelligence

August 2021: 5.06 x 7.81: 184pp

Hb: 978-1-032-04871-0: **£56.99**

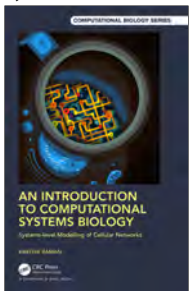
Pb: 978-1-032-04870-3: **£14.99**

eBook: 978-1-003-19496-5

\* For full contents and more information, visit: [www.routledge.com/9781032048710](http://www.routledge.com/9781032048710)

## An Introduction to Computational Systems Biology

Systems-Level Modelling of Cellular Networks



Karthik Raman, Indian Institute of Technology Madras, Chennai

Series: *Chapman & Hall/CRC Computational Biology Series*

The main objective of this book is to deliver a comprehensive and insightful account of applying mathematical modelling approaches to very large biological systems and networks, a fundamental aspect of computational systems biology. Several key modelling paradigms will be discussed in detail. The area is itself highly multi-disciplinary, and the audience will therefore include biologists, engineers, computer scientists, mathematicians and others. The idea is to present a sufficiently compelling account of the modelling strategies, but at the same time, retaining simplicity so as to appeal to those from less

quantitative fields.

Chapman and Hall/CRC

Market: Computer Science & Engineering

May 2021: 6.14 x 9.21: 358pp

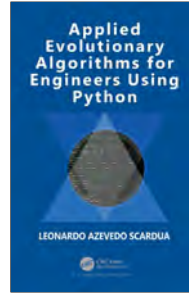
Hb: 978-1-138-59732-7: **£69.99**

eBook: 978-0-429-48695-1

\* For full contents and more information, visit: [www.routledge.com/9781138597327](http://www.routledge.com/9781138597327)



## Applied Evolutionary Algorithms for Engineers Using Python



Leonardo Azevedo Scardua, Instituto Federal do Espirito Santo Rodovia ES010, KM 6,5 Serra, ES 29173-087 Brazil

This book meant for students, scientists and engineers to help in the application of evolutionary algorithms to practical optimization problems. The presentation of theoretical background is complemented with didactical Python implementations of evolutionary algorithms that researchers have recently applied to complex optimization problems. Successful cases of application of evolutionary algorithms to real-world like optimization problems are presented, together with source code that gives readers an insight into the idiosyncrasies of the practical application of evolutionary algorithms.

CRC Press

Market: Computer Science & Engineering

June 2021: 6.14 x 9.21: 254pp

Hb: 978-0-367-26313-3: **£130.00**

eBook: 978-0-429-29802-8

\* For full contents and more information, visit: [www.routledge.com/9780367263133](http://www.routledge.com/9780367263133)

## Applied Swarm Intelligence

Edited by Yaniv Altshuler, Research Affiliate MIT Media Lab 77 Massachusetts Ave., E15-383, Cambridge, MA 02139

This book offers a comprehensive analysis of the variety of tools and techniques used today for the design and modeling of efficient and robust swarm-intelligence based systems: highly (or fully) decentralized, semi-autonomous, highly-scalable infrastructures in various real-life scenarios. Among others, the book reviews the use of the swarm intelligence paradigm in financial investment, blockchain protocols design, shared transportation systems, communication networks, and military applications. Theoretical and practical limitations of such systems are discussed, as well as trade-offs between the various economic and operational parameters of the systems.

CRC Press

Market: Computer Science & Engineering

December 2021: 235 x 156: 200pp

Hb: 978-0-367-22687-9: **£126.00**

\* For full contents and more information, visit: [www.routledge.com/9780367226879](http://www.routledge.com/9780367226879)

## Artificial Intelligence

Technologies, Applications, and Challenges

Edited by Lavanya Sharma, Amity university, Noida, India. and Pradeep Kumar Garg, IIT Roorkee, India.

This book is an invaluable resource for readers to explore the utilization of AI, applications, challenges, and its underlying technologies in different applications areas, such as indoor-outdoor securities, graphic signal processing, and many more. This book will be an ideal resource for IT professionals, researchers, under or post-graduate students, practitioners, and technology developers who are interested in gaining insight to the Artificial Intelligence with deep learning, IoT and machine learning, critical applications domains, technologies, and solutions to handle relevant challenges.

Chapman and Hall/CRC

October 2021: 7 x 10: 264pp

Hb: 978-0-367-69080-9: **£120.00**

eBook: 978-1-003-14035-1

\* For full contents and more information, visit: [www.routledge.com/9780367690809](http://www.routledge.com/9780367690809)

## BIM-enabled Cognitive Computing for Smart Built Environment

Potential, Requirements, and Implementation



Edited by **Ibrahim Yitmen**, Department of Construction Engineering and Lighting Science, School of Engineering, Jonkoping University

The book brings together the Building Information Model (BIM)-enabled cognitive computing methods for smart built environment, and focuses on the potential, requirements and implementation of cognitive Internet of Things (CIoT) paradigm to buildings, Augmented Reality/Mixed Reality into cognitive building concepts, cognitive smart cities in its complexity, heterogeneity, and scope, and challenges of utilizing the big data generated by smart cities from a machine learning perspective.

CRC Press

**Market:** Computer Sciences

June 2021: 6.14 x 9.21: 256pp

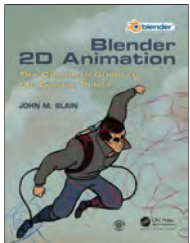
Hb: 978-0-367-86183-4: **£120.00**

eBook: 978-1-003-01754-7

\* For full contents and more information, visit: [www.routledge.com/9780367861834](http://www.routledge.com/9780367861834)

## Blender 2D Animation

The Complete Guide to the Grease Pencil



**John M. Blain**, Toormina, New South Wales, Australia

*Blender 2D Animation: The Complete Guide to the Grease Pencil* describes how to access the Grease Pencil component in Blender and create 2D Animation within the Blender 3D environment. It is assumed that the reader has no previous knowledge of the Blender program and treats 2D Animation using the Grease Pencil as a stand alone application.

The Grease Pencil is a component of the 3D Modeling and Animation Program - Blender. Blender is a free open-source 3D Computer Graphics software toolset used for creating animated films, visual effects, art, 3D printed models, motion graphics,

interactive 3D applications, virtual reality and computer games.

A K Peters/CRC Press

**Market:** Computer Graphics & Animation

August 2021: 244pp

Hb: 978-1-032-11034-9: **£110.00**

Pb: 978-1-032-11032-5: **£42.99**

eBook: 978-1-003-21813-5

\* For full contents and more information, visit: [www.routledge.com/9781032110349](http://www.routledge.com/9781032110349)

## Blockchain for Big Data

AI, IoT and Cloud Perspectives



**Shaoliang Peng**

In this work, the author investigates research into and the application of blockchain technology in the field of big data and assesses the attendant advantages and challenges. While discussing the possible future directions of the convergence of blockchain and big data. After mastering concepts and technologies introduced in this work, readers will be able to understand the technical evolution, similarities, and differences between blockchain and big data technology, allowing them to further apply it in their development and research.

CRC Press

**Market:** Computer Science, Blockchain, Big Data

August 2021: 6 x 9: 200pp

Hb: 978-1-032-06304-1: **£58.99**

eBook: 978-1-003-20167-0

\* For full contents and more information, visit: [www.routledge.com/9781032063041](http://www.routledge.com/9781032063041)

## C Programming

Learn to Code

**Sisir Kumar Jena**, DIT University, India

The C programming language is a popular language in industries as well as academics. Since its invention and standardized as ANSI C, several other standards known as C99, C11, and C17 were published with new features in subsequent years. This book covers all the traits of ANSI C and includes new features present in other standards. The content of this book helps a beginner to learn the fundamental concept of the C language. The book contains a step-by-step explanation of every program that allows a learner to understand the syntax and builds a foundation to write similar programs. Besides, exercises and illustrations present in this book make it a complete textbook in all aspects.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

October 2021: 7 x 10: 320pp

Hb: 978-1-032-03625-0: **£100.00**

eBook: 978-1-003-18825-4

\* For full contents and more information, visit: [www.routledge.com/9781032036250](http://www.routledge.com/9781032036250)

## Cloud Security

Concepts, Applications and Perspectives



Edited by **Brij B. Gupta**, National Institute of Technology Kurukshetra India

*Series: Cyber Ecosystem and Security*

Cloud computing has proven to be an extraordinary computing paradigm by providing rapidly deployable and scalable IT solutions with reduced infrastructure costs. However, there are numerous challenges associated with this technology that require complete understanding in order to be addressed. *Cloud Security: Concepts, Applications and Perspectives* discusses the state-of-the-art techniques and methodologies, and covers wide range of examples and illustrations to effectively show the principles, algorithms, applications and practices of security in cloud computing. It also provides valuable insights into the

security and privacy aspects in cloud.

CRC Press

**Market:** Cyber Security

May 2021: 6.14 x 9.21: 258pp

Hb: 978-0-367-40715-5: **£150.00**

eBook: 978-0-367-82155-5

\* For full contents and more information, visit: [www.routledge.com/9780367407155](http://www.routledge.com/9780367407155)

## Computational Design

Technology, Cognition and Environments



**Rongrong Yu**, Griffith University 3,30/G39, Gold Coast Campus Southport QLD 4222 Australia, **Ning Gu** and **Michael J. Ostwald**, University of Newcastle, Australia

With the rapid emergence and adoption of new computational design technologies in the field of design, it is important to understand how designer's respond to the new environments. This book systematically explores the impact of emerging computational design environments on design and designers. It offers a unique opportunity to look into design thinking in the current digital age.

CRC Press

**Market:** Information Technology

July 2021: 6.14 x 9.21: 252pp

Hb: 978-0-367-20306-1: **£125.00**

eBook: 978-0-429-26078-0

\* For full contents and more information, visit: [www.routledge.com/9780367203061](http://www.routledge.com/9780367203061)

## Computing Technologies and Applications

Paving Path Towards Society 5.0

Edited by **Latesh Malik**, GCE Nagpur, **Sandhya Arora**, CCEW Pune, **Urmila Shrawankar**, RTM Univ., **Maya Ingle**, DAVV, Indore and **Indu Bhagat**, Oracle, Canada

Series: *Demystifying Technologies for Computational Excellence*

Making use of digital technology for social care services is the major responsibility of computing domain. This book focuses on suggesting software solutions for supporting societal issues such as health care, learning and monitoring mythology for disables, technical solutions for better living, computing technologies, basic theories, challenges, and implementation with case studies. In addition, core theories, architectures, and technologies necessary to develop and understand the computing models and its applications is also taken care of in the book. It will be useful for undergraduates, postgraduates, researchers and industry professionals.

Chapman and Hall/CRC

Market: Computer Science and Engineering

November 2021: 7 x 10: 344pp

Hb: 978-0-367-76370-1: **£140.00**

eBook: 978-1-003-16670-2

\* For full contents and more information, visit: [www.routledge.com/9780367763701](http://www.routledge.com/9780367763701)

## Create Stunning Renders Using V-Ray in 3d Max

Guiding the Next Generation of 3D Renderers

Margarita Nikita

*Create Stunning Renders Using V-Ray in 3d Max: Guiding the Next Generation of 3D Renderers* is a step by step guide on how to create realistic renderings using V-Ray for 3ds Max. The potentials of V-Ray are detailed using a bedroom scene as an example. The book introduces the 3ds Max interface and the basic commands, so that the reader can get familiar with the work environment from the very beginning.

This book is intended for architects, interior designers, and anyone else wanting to create photorealistic renderings using V-Ray in 3ds Max. The reader does not need to have any experience to follow this book, but any prior knowledge of working in 3ds Max will help the reader jump right in.

A K Peters/CRC Press

Market: Computer Graphics

October 2021: 6.14 x 9.21: 240pp

Hb: 978-0-367-70148-2: **£120.00**

Pb: 978-0-367-70135-2: **£45.99**

eBook: 978-1-003-14478-6

\* For full contents and more information, visit: [www.routledge.com/9780367701482](http://www.routledge.com/9780367701482)

## Custom Search - Discover more:

A Complete Guide to Google Programmable Search Engines



Irina Shamaeva and David Michael Galley

Google's Programmable Search Engines (PSEs, previously called Custom Search Engines) provide search opportunities that are unavailable with any other tool. PSEs have advanced settings and search operators that are not supported by "regular" Google. With PSEs, it is possible to perform filtered searches within parts of the web as if they were databases! While lots of professionals use existing PSEs to source for talent or with other research goals, few people have experience creating them. Even fewer know about powerful PSE-only search operators. The first of its kinds, this book hopes to popularize these fun and powerful tools so that many more people include PSEs their work.

Chapman and Hall/CRC

Market: Computer Science

June 2021: 6 x 9: 194pp

Hb: 978-0-367-56968-6: **£89.99**

Pb: 978-0-367-56739-2: **£42.99**

eBook: 978-1-003-10013-3

\* For full contents and more information, visit: [www.routledge.com/9780367569686](http://www.routledge.com/9780367569686)

## Cyberspace, Data Analytics, and Policing

David Skillicorn, Queen's University, Canada

*Cyberspace, Data Analytics, and Policing* surveys the changes that cyberspace has brought to criminality and to policing with enough technical content to expose the issues and suggest ways in which law enforcement organizations can adapt.

Chapman and Hall/CRC

Market: Computer Science

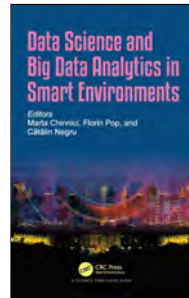
November 2021: 6 x 9: 272pp

Hb: 978-0-367-64276-1: **£61.99**

eBook: 978-1-003-12622-5

\* For full contents and more information, visit: [www.routledge.com/9780367642761](http://www.routledge.com/9780367642761)

## Data Science and Big Data Analytics in Smart Environments



Edited by **Marta Chinnici**, **Florin Pop**, Politehnica University of Bucharest, Romania and **Catalin Negru**

Many applications generate large datasets, like social networking and social influence programs, smart cities applications, smart house environments, Cloud applications, public web sites, scientific experiments and simulations, data warehouse, monitoring platforms, and e-government services. This book will primarily encompass practical approaches that advance research in all aspects of data processing, data analytics, data processing in Cloud/Edge/Fog systems, having a large variety of tools and software to manage them. The book focuses on focuses on topics covering algorithms, architectures, management models, high performance computing techniques and large-scale distributed systems.

CRC Press

Market: Data Science

July 2021: 6.14 x 9.21: 304pp

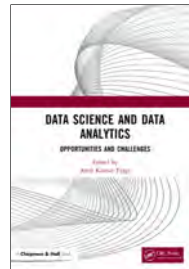
Hb: 978-0-367-40713-1: **£130.00**

eBook: 978-0-367-81439-7

\* For full contents and more information, visit: [www.routledge.com/9780367407131](http://www.routledge.com/9780367407131)

## Data Science and Data Analytics

Opportunities and Challenges



Edited by **Amit Kumar Tyagi**

Data science is a multi-disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured (labelled) and unstructured (unlabelled) data. Data science helps us in extracting meaningful information (or insights) from the unstructured or complex or large amount of data (available or stored around us virtually at cloud). In summary, this book will cover all the possible areas, applications with arising serious concerns, and challenges towards this emerging area/ field in detail (with a comparative analysis/taxonomy).

Chapman and Hall/CRC

Market: Computer Science

September 2021: 7 x 10: 486pp

Hb: 978-0-367-62882-6: **£140.00**

eBook: 978-1-003-11129-0

\* For full contents and more information, visit: [www.routledge.com/9780367628826](http://www.routledge.com/9780367628826)



## Data Science and Its Applications



Edited by **Aakanksha Sharaff**, NATIONAL INSTITUTE OF TECHNOLOGY, India and **G R Sinha**, IIT, Myanmar

This book discusses about data science overview, scientific methods, data processing, extraction of meaningful information from data, and insight for developing the concept from different domains, highlighting mathematical and statistical models, machine learning, data visualization, pattern recognition and others. It also highlights data science implementation and evaluation of performance in several emerging applications such as information retrieval, cognitive science, healthcare, and computer vision. The data analysis covers the role of data science depicting different types of data such as text, image, biomedical

signal etc. useful for a wide range of real time applications.

Chapman and Hall/CRC

**Market:** Computer Science

August 2021: 7 x 10: 378pp

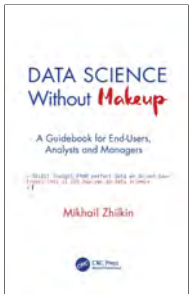
Hb: 978-0-367-60886-6: **£170.00**

eBook: 978-1-003-10238-0

\* For full contents and more information, visit: [www.routledge.com/9780367608866](http://www.routledge.com/9780367608866)

## Data Science Without Makeup

A Guidebook for End-Users, Analysts and Managers



**Mikhail Zhilkin**

Why data science is hard, what pitfalls analysts and decision-makers fall into, and what everyone involved can do to give themselves a fighting chance – the book examines these and other questions with the skepticism of someone who has seen the sausage being made.

Honest and direct, full of examples from real life, *Data Science Without Makeup: A Guidebook for End-Users, Analysts and Managers* will be of great interest to people who aspire to work with data, people who already work with data, and people who work with people who work with data - from students to professional researchers and from early-career to seasoned professionals.

Chapman and Hall/CRC

**Market:** Data Science

October 2021: 6.14 x 9.21: 192pp

Hb: 978-0-367-52322-0: **£56.99**

Pb: 978-0-367-52068-7: **£22.99**

eBook: 978-1-003-05742-0

\* For full contents and more information, visit: [www.routledge.com/9780367523220](http://www.routledge.com/9780367523220)

## Data Structures using C

A Practical Approach for Beginners

**Amol M. Jagtap** and **Ajit S. Mali**

The data structure is a set of specially organized data elements and functions are defined to store, retrieve, remove and search for individual data elements. *Data Structures: A Practical Approach for Beginners* covers all issues related to the amount of storage needed, the amount of time required to process the data, data representation of the primary memory and operations carried out with such data. This book will help students learn data structure and algorithms in a focused. This book is primarily aimed at undergraduates and graduates of computer science and information technology. Students of all engineering disciplines will also find this book useful.

Chapman and Hall/CRC

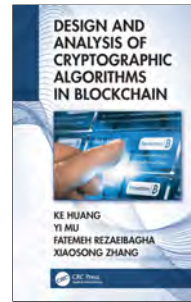
November 2021: 6.14 x 9.21: 280pp

Hb: 978-0-367-61631-1: **£99.99**

eBook: 978-1-003-10580-0

\* For full contents and more information, visit: [www.routledge.com/9780367616311](http://www.routledge.com/9780367616311)

## Design and Analysis of Cryptographic Algorithms in Blockchain



**Ke Huang, Yi Mu, Fatemeh Rezaeibagha** and **Xiaosong Zhang**

This book seeks to generalize techniques and experiences in designing and analyzing cryptographic schemes for blockchain. It devotes three chapters to review the background and basic knowledge, four chapters to discuss specific types of cryptographic primitive design for blockchain, one chapter to discuss optimization tool and another chapter for blockchain regulation and economics. This book covers systematical survey of research objects, detailed reviews of cryptographic schemes, as well as lectures and methodologies to practice cryptography. This is a useful textbook for graduate students, PhD students and researchers who are in relative areas.

CRC Press

**Market:** Computer Science, Cryptography, Blockchain

August 2021: 6.14 x 9.21: 238pp

Hb: 978-1-032-03932-9: **£74.99**

Pb: 978-1-032-03991-6: **£42.99**

eBook: 978-1-003-19012-7

\* For full contents and more information, visit: [www.routledge.com/9781032039329](http://www.routledge.com/9781032039329)

## Design of Intelligent Applications using Machine Learning and Deep Learning Techniques



Edited by **Ramchandra Sharad Mangrulkar**, Dwarkadas J. Sanghvi Clg of Eng, Maharashtra, **Antonis Michalas**, Tampere University, Finland, **Narendra Shekokar**, Dwarkadas J. Sanghvi Clg of Eng, Maharashtra, **Meera Narvekar**, Dwarkadas J. Sanghvi Clg of Eng, Maharashtra and **Pallavi Vijay Chavan**, Ramrao Adik Institute of Technology, India

This book equips readers with the knowledge to data analytics, machine learning and deep learning techniques for applications defined under the umbrella of Industry 4.0. The book offers comprehensive coverage, promising ideas and outstanding research contribution supporting further development of machine learning and deep learning approaches applying

intelligence in various applications.

Chapman and Hall/CRC

**Market:** Computer Science

August 2021: 7 x 10: 446pp

Hb: 978-0-367-67979-8: **£130.00**

eBook: 978-1-003-13368-1

\* For full contents and more information, visit: [www.routledge.com/9780367679798](http://www.routledge.com/9780367679798)

## Developing Graphics Frameworks with Python and OpenGL



**Lee Stemkoski** and **Michael Pascale**

*Developing Graphics Frameworks with Python and OpenGL* shows you how to create software for rendering complete three-dimensional scenes. The authors explain the foundational theoretical concepts as well as the practical programming techniques that will enable you to create your own animated and interactive computer-generated worlds.

You will learn how to combine the power of OpenGL, the most widely adopted cross-platform API for GPU programming, with the accessibility and versatility of the Python programming language. Topics you will explore include generating geometric shapes, transforming objects with matrices, applying image-based textures to surfaces, and lighting your scene.

CRC Press

**Market:** Computer Graphics

July 2021: 6.14 x 9.21: 344pp

Hb: 978-0-367-72180-0: **£89.99**

eBook: 978-1-003-18137-8

\* For full contents and more information, visit: [www.routledge.com/9780367721800](http://www.routledge.com/9780367721800)

## Digital Transformation in a Post-Covid World

Sustainable Innovation, Disruption, and Change

Edited by **Adrian T. H. Kuah**, James Cook Univ and **Roberto Dillon**, James Cook Univ

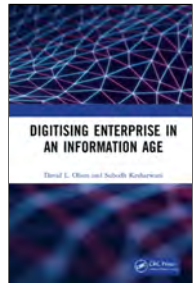
This book explores the innovations, disruptions and changes that are required to adapt in a fast-evolving landscape due to the extraordinary circumstances triggered by the Covid-19 pandemic. Recognized experts from around the world share their research and professional experience on how the working environment, as well as the world around them, have changed due to the pandemic. This book will be of great interest to those in the fields of computer science and information technology, as well as those studying the impact and effects of Covid-19 is having on society.

CRC Press

**Market:** Computer Science  
October 2021: 6.14 x 9.21: 368pp  
Hb: 978-1-032-07738-3: **£120.00**  
Pb: 978-0-367-70958-7: **£44.99**  
eBook: 978-1-003-14871-5

\* For full contents and more information, visit: [www.routledge.com/9781032077383](http://www.routledge.com/9781032077383)

## Digitising Enterprise in an Information Age



David L. Olson and Subodh Kesharwani

This book is an effort that focuses on a very vast cluster of Enterprises and their digitising technology involvement and take us through the road map of the implementation process in them, some of them being ICT, Banking, Stock Markets, Textile Industry & ICT, Social Media, Software Quality Assurance, Information Systems Security and Risk Management, Employee Resource Planning etc. It delves on increased instances of cyber spamming and the threat that poses to e-Commerce and Banking and tools that help and Enterprise toward of such threats

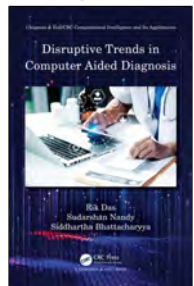
Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

**Market:** Computer Science  
June 2021: 6.14 x 9.21: 372pp  
Hb: 978-1-032-06630-1: **£99.99**  
eBook: 978-1-003-20313-1

\* For full contents and more information, visit: [www.routledge.com/9781032066301](http://www.routledge.com/9781032066301)

## Disruptive Trends in Computer Aided Diagnosis



Edited by **Rik Das**, Xavier Institute of Social Service, Ranchi, **Sudarshan Nandy**, Amity Univ. Kolkata and **Siddhartha Bhattacharyya**, Christ Univ. Bangalore

*Series: Chapman & Hall/CRC Computational Intelligence and Its Applications*

Disruptive Trends in Computer Aided Diagnosis collates novel techniques and methodologies in the domain of content based image classification and deep learning/machine learning techniques to design efficient computer aided diagnosis architecture. It is aimed to highlight new challenges and probable solutions in this domain to leverage balancing of sustainable ecology. State-of-the-art novel methods are explored for envisaging automated diagnosis systems thereby overriding

the limitations. The assorted techniques addresses the challenges encountered in existing systems thereby facilitating accurate patient healthcare and diagnosis.

Chapman and Hall/CRC

**Market:** Computer Science & Engineering  
September 2021: 6.14 x 9.21: 232pp  
Hb: 978-0-367-49337-0: **£110.00**  
eBook: 978-1-003-04581-6

\* For full contents and more information, visit: [www.routledge.com/9780367493370](http://www.routledge.com/9780367493370)

## Dungeon Hacks

How NetHack, Angband, and Other Roguelikes Changed the Course of Video Games



David L. Craddock

In 1980, computers were instruments of science and mathematics, military secrets and academia. Stern administrators lorded over sterile university laboratories and stressed one point to the wide-eyed students privileged enough to set foot within them: Computers were not toys.

CRC Press

**Market:** Games and Animation  
August 2021: 7 x 10: 172pp  
Hb: 978-1-032-05240-3: **£74.99**  
Pb: 978-1-032-05154-3: **£29.99**  
eBook: 978-1-003-19671-6

\* For full contents and more information, visit: [www.routledge.com/9781032052403](http://www.routledge.com/9781032052403)

## Environment Art in the Game Industry

A Guide to Rich and Realistic Environments using Substance Designer  
Henry Kelly

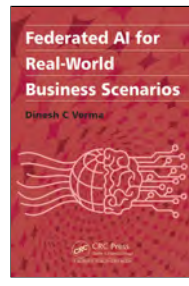
This book explains the fundamentals of being a talented games environment artist, outlining the key considerations that most environment artists tend to forget. With a focus on using Substance Designer to create rich, colorful, and realistic environments, the book shows you how to improve your story telling and think outside of the box. This book will be of great interest to new and aspiring games environment artists, as well as those looking to increase their knowledge of Substance Designer.

CRC Press

**Market:** Game Design  
October 2021: 6.14 x 9.21: 224pp  
Hb: 978-0-367-70679-1: **£110.00**  
Pb: 978-0-367-70676-0: **£42.99**  
eBook: 978-1-003-14749-7

\* For full contents and more information, visit: [www.routledge.com/9780367706791](http://www.routledge.com/9780367706791)

## Federated AI for Real-World Business Scenarios



Dinesh C. Verma

This book provides a holistic overview of all aspects of federated AI, which allows creation of real-world applications in contexts where data is dispersed in many different locations. It covers all stages in the creation and use of AI based applications, presenting patterns for distributed model learning, distributed inference and acting on those results. It includes real-world examples of solutions that have been built using federated learning and discusses how to handle data issues during federation, maintaining compliance with enterprise security policies, and approaches that simplify the logistics of federated AI in enterprise contexts.

CRC Press

**Market:** Computer Science  
October 2021: 6.14 x 9.21: 218pp  
Hb: 978-0-367-86157-5: **£125.00**  
eBook: 978-1-003-02717-1

\* For full contents and more information, visit: [www.routledge.com/9780367861575](http://www.routledge.com/9780367861575)

2nd Edition

**Force: Animal Drawing**

Animal Locomotion and Design Concepts for Animators



**Mike Mattesi**, Director of the Entertainment Art Academy based in Southern California.

*Series: Force Drawing Series*

This second edition of Force: Animal Drawing Animal Locomotion and design concepts for animators offers readers an enlarged and enhanced selection of images that apply FORCE to animals.

CRC Press

**Market:** Games and Animation  
August 2021: 8.25 x 11: 232pp  
Hb: 978-0-367-77156-0: **£115.00**  
Pb: 978-0-367-63707-1: **£32.99**  
eBook: 978-1-003-17004-4

\* For full contents and more information, visit: [www.routledge.com/9780367771560](http://www.routledge.com/9780367771560)

**Fundamentals of Data Science**

**Sanjeev J. Wagh**, Department of Information Technology, Government College of Engineering, Karad, India, **Manisha S. Bhende**, SP Pune Univ. and **Anuradha D. Thakare**, SP Pune Univ.

Fundamentals of Data Science is designed for students, academicians and practitioners with a complete walkthrough right from the foundational groundwork required to outlining all the concepts, techniques and tools required to understand Data Science. This book offers all the processes, methodologies, various steps like data acquisition, pre-process, mining, prediction, and visualization tools for extracting insights from vast amounts of data by the use of various scientific methods, algorithms, and processes. Readers will learn the steps necessary to create the application with SQL, NoSQL, Python, R, Matlab, Octave and Tableau.

Chapman and Hall/CRC

**Market:** Computer Science & Engineering  
September 2021: 6.14 x 9.21: 264pp  
Hb: 978-1-138-33618-6: **£120.00**  
eBook: 978-0-429-44323-7

\* For full contents and more information, visit: [www.routledge.com/9781138336186](http://www.routledge.com/9781138336186)

**Game Balance**

**Ian Schreiber** and **Brenda Romero**

Within the field of game design, game balance can best be described as a black art. It is the process by which game designers make a game simultaneously fair for players while providing them just the right amount of difficulty to be both exciting and challenging without making the game entirely predictable. This involves a combination of mathematics, psychology, and occasionally other fields such as economics and game theory. Throughout the book, relevant topics on the use of spreadsheet programs will be included in each chapter. The book therefore doubles as a useful reference on Microsoft Excel, Google Spreadsheets, and other spreadsheet programs and their uses for game designers.

CRC Press

**Market:** Games & Animation  
August 2021: 6.14 x 9.21: 806pp  
Hb: 978-1-032-03400-3: **£115.00**  
Pb: 978-1-498-79957-7: **£52.99**  
eBook: 978-1-498-79958-4

\* For full contents and more information, visit: [www.routledge.com/9781032034003](http://www.routledge.com/9781032034003)

**Game Design Deep Dive: Horror**

Joshua Bycer

The Game Design Dive series examines a specific game system or mechanic over the course of the history of the industry. This text will examine the history and design of the horror genre and elements in video games.

CRC Press

**Market:** Games and Animation  
September 2021: 6 x 9: 148pp  
Hb: 978-1-032-05806-1: **£115.00**  
Pb: 978-0-367-72174-9: **£39.04**  
eBook: 978-1-003-19925-0

\* For full contents and more information, visit: [www.routledge.com/9781032058061](http://www.routledge.com/9781032058061)

**Game Dev Stories**

Interviews About Game Development and Culture Volumes 1 and 2

David L. Craddock

Game Dev Stories: Conversations with Game Developers Volume 1 and 2 are a collection of interviews from renowned author, David L. Craddock, as he explores all corners of the video game industry.

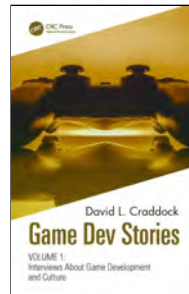
CRC Press

**Market:** Games and Animation  
August 2021: 7 x 10: 386pp  
Hb: 978-1-032-06680-6: **£142.72**  
Pb: 978-1-032-06677-6: **£70.86**

\* For full contents and more information, visit: [www.routledge.com/9781032066806](http://www.routledge.com/9781032066806)

**Game Dev Stories Volume 1**

Interviews About Game Development and Culture



David L. Craddock

Game Dev Stories: Conversations with Game Developers Volume 1 and 2 are a collection of interviews from renowned author, David L. Craddock, as he explores all corners of the video game industry.

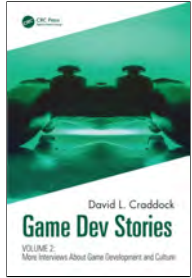
CRC Press

**Market:** Games and Animation  
August 2021: 7 x 10: 192pp  
Hb: 978-1-032-05906-8: **£115.00**  
Pb: 978-1-032-05905-1: **£35.43**  
eBook: 978-1-003-19978-6

\* For full contents and more information, visit: [www.routledge.com/9781032059068](http://www.routledge.com/9781032059068)

## Game Dev Stories Volume 2

More Interviews About Game Development and Culture



David L. Craddock

Game Dev Stories: Conversations with Game Developers Volume 1 and 2 are a collection of interviews from renowned author, David L. Craddock, as he explores all corners of the video game industry.

CRC Press

**Market:** Games and Animation

August 2021: 7 x 10: 194pp

Hb: 978-1-032-06265-5: **£115.00**

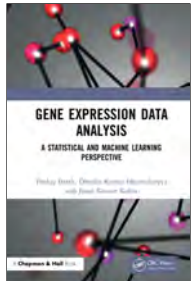
Pb: 978-1-032-06264-8: **£35.89**

eBook: 978-1-003-20145-8

\* For full contents and more information, visit: [www.routledge.com/9781032062655](http://www.routledge.com/9781032062655)

## Gene Expression Data Analysis

A Statistical and Machine Learning Perspective



Pankaj Barah, Tezpur Univ., Dhruba Kumar Bhattacharyya, Tezpur Univ. and Jugal Kumar Kalita, University of Colorado

The book explains with examples how complex gene expression data can be mined using powerful machine learning and statistical techniques to extract non-trivial, yet previously unknown interesting patterns for a given biological question. The readers will learn how a practical machine learning solution can be developed to analyze gene expression data using a co-expression or differential expression analysis approach to identify interesting gene(s), biomarker(s) or pattern(s) that can have high relevance in handling a critical disease. It will help understand the applicability of these approaches in real-life bioinformatics problem solving.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

August 2021: 6.14 x 9.21: 392pp

Hb: 978-0-367-33889-3: **£130.00**

eBook: 978-0-429-32265-5

\* For full contents and more information, visit: [www.routledge.com/9780367338893](http://www.routledge.com/9780367338893)

## Handbook of AI-based Metaheuristics

Edited by Anand J. Kulkarni, Symbiosis Center for Research and Innovation, Pune, India and Patrick Siarry, Universite Paris-Est Creteil, France

*Series: Advances in Metaheuristics*

The *Handbook of AI-based Metaheuristics* provides a wide-ranging reference to the theoretical and mathematical formulations of metaheuristics, including bio-inspired, swarm-based, socio-cultural and physics-based methods or algorithms; their testing and validation, along with detailed illustrative solutions and applications, as well as newly devised metaheuristic algorithms.

The book will be a valuable reference to researchers from industry and academia, as well as Masters and PhD students around the globe working in the metaheuristics and applications domain.

CRC Press

**Market:** Computer Science

September 2021: 6.85 x 9.69: 418pp

Hb: 978-0-367-75303-0: **£190.00**

eBook: 978-1-003-16284-1

\* For full contents and more information, visit: [www.routledge.com/9780367753030](http://www.routledge.com/9780367753030)

## How Things Work

The Computer Science Edition



Charles F. Bowman

*Series: How Things Work Series*

*How Things Work: The Computer Science Edition* will serve as a roadmap for readers who want to overcome their technophobia and harness the full power of everyday technology. Beginning with the basics, it will demystify the mysterious world of computer science, explain its fundamental concepts in simple terms, and answer the questions many users feel too intimidated to ask.

After finishing the book, readers will understand how computers and smartphones function and, more importantly, how they can make these devices work for them. To complete the picture, it will also introduce readers to the darker side of modern technology such as security and privacy concerns.

Chapman and Hall/CRC

**Market:** Computer Science

August 2021: 7 x 10: 272pp

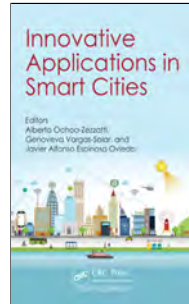
Hb: 978-0-367-56837-5: **£120.00**

Pb: 978-0-367-56731-6: **£45.99**

eBook: 978-1-003-09956-7

\* For full contents and more information, visit: [www.routledge.com/9780367568375](http://www.routledge.com/9780367568375)

## Innovative Applications in Smart Cities



Edited by Alberto Ochoa, Universidad Autónoma de Ciudad Juárez, Mexico, Genoveva Vargas-Solar, French Council of Scientific Research(CNRS) - LIRIS Lab, France and Javier Alfonso Espinosa Oviedo

The book introduces new ideas and paradigms from different perspectives using innovative techniques based on Artificial Intelligence algorithms and methodologies for addressing challenges in Smart Cities. The book reviews different components of a Smart City in the context of diverse societies, deploy their resources and leverage their capabilities to achieve better performance of its various labor skills, marketing, social responsibility and management capacity.

CRC Press

**Market:** Urban Planning

September 2021: 7 x 10: 282pp

Hb: 978-0-367-82096-1: **£140.00**

eBook: 978-1-003-19114-8

\* For full contents and more information, visit: [www.routledge.com/9780367820961](http://www.routledge.com/9780367820961)

## Intelligent Modelling, Prediction, and Diagnosis from Epidemiological Data

COVID-19 and Beyond

Edited by Siddhartha Bhattacharyya

*Series: Chapman & Hall/CRC Computational Intelligence and Its Applications*

Intelligent Modelling, Prediction, and Diagnosis from Epidemiological Data COVID-19 and Beyond is a handy treatise to elicit and elaborate possible intelligent mechanisms for modeling, prediction, diagnosis and early detection of diseases arising out of outbreaks of different epidemics with special reference to COVID-19. Starting with a formal introduction of the human immune systems, this book focuses on the epidemiological aspects with due cognizance to modeling, prevention and diagnosis of epidemics. In addition, it also deals with evolving decisions on post-pandemic economic-social structure.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

November 2021: 7 x 10: 256pp

Hb: 978-0-367-74606-3: **£120.00**

eBook: 978-1-003-15868-4

\* For full contents and more information, visit: [www.routledge.com/9780367746063](http://www.routledge.com/9780367746063)

## Intelligent Support for Computer Science Education

Pedagogy Enhanced by Artificial Intelligence

Barbara Di Eugenio, Davide Fossati and Nick Green

*Intelligent Support for Computer Science Education* presents the authors' research journey into the effectiveness of human tutoring, with the goal of developing educational technology that can be used to improve introductory Computer Science education at the undergraduate level. Computer Science education is central to the concerns of society, as attested by the penetration of information technology in all aspects of our lives; consequently, in the last few years interest in Computer Science at all levels of schooling, especially at the college level, has been flourishing. However, introductory concepts in Computer Science such as data structures and recursion are difficult for novices to grasp.

CRC Press

**Market:** Computer Science & Engineering

September 2021: 6.14 x 9.21: 312pp

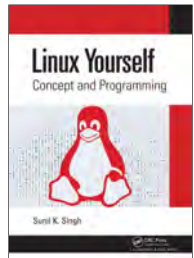
Hb: 978-1-138-05201-7: **£100.00**

eBook: 978-1-315-16806-7

\* For full contents and more information, visit: [www.routledge.com/9781138052017](http://www.routledge.com/9781138052017)

## Linux Yourself

Concept and Programming



Sunil K. Singh, CCET, Panjab University

This book aims to provide a deep insight into the concept of Linux, its usage, programming and several other connected topics. The book promotes hands-on practices of regular expressions and filters like sed & awk through many concretely executed examples. A thorough reading of the book will help the reader understand how to effectively use Linux. A person with basic knowledge of C and/or C++ programming will be able to grasp the concepts with ease.

Chapman and Hall/CRC

**Market:** Computer Science & Technology

August 2021: 7 x 10: 474pp

Hb: 978-1-138-33328-4: **£130.00**

eBook: 978-0-429-44604-7

\* For full contents and more information, visit: [www.routledge.com/9781138333284](http://www.routledge.com/9781138333284)

## Machine Intelligence

Learning, Inference, and Evolution

Hamid Tizhoosh, University of Waterloo, Ontario, Canada

This book will provide an introduction to machine learning, fuzzy systems and evolutionary algorithms for senior undergraduate students at universities and colleges as well as for practitioners. The text intends to cover major schemes, methods and algorithms in different aspects of machine intelligence including comprehensive introduction of intelligent techniques for the desired audience. Fuzzy systems, reinforcement learning, evolutionary algorithms and swarm intelligence will be covered along with neural networks, SVM, probability, decision trees and more. This will help to establish the notion that "intelligence" is more than "learning."

CRC Press

**Market:** Computer Science & Engineering

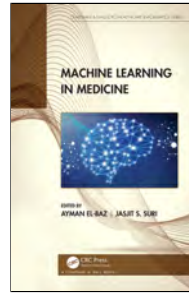
June 2021: 235 x 156: 450pp

Hb: 978-1-138-19622-3: **£100.00**

eBook: 978-1-315-30279-9

\* For full contents and more information, visit: [www.routledge.com/9781138196223](http://www.routledge.com/9781138196223)

## Machine Learning in Medicine



Edited by Ayman El-Baz, University of Louisville, Kentucky, USA and Jasjit S. Suri, Global Biomedical Technologies, Inc., CA, USA

Series: *Chapman & Hall/CRC Healthcare Informatics Series*

*Machine Learning in Medicine* covers the state-of-the-art techniques of machine learning and their applications in the medical field. It presents several Computer-aided diagnosis (CAD) systems, which have played an important role in the diagnosis of several diseases in the past decade e.g., cancer detection, resulting in the development of several successful systems.

This book will help to advance scientific research within the broad field of machine learning in the medical field. The book focuses on major trends and challenges in this area, and it

presents work aimed at identifying new techniques and their use in biomedical analysis, including extensive references at the end of each chapter.

Chapman and Hall/CRC

**Market:** Computer Science & Engineering

August 2021: 6.14 x 9.21: 312pp

Hb: 978-1-138-10690-1: **£150.00**

eBook: 978-1-315-10132-3

\* For full contents and more information, visit: [www.routledge.com/9781138106901](http://www.routledge.com/9781138106901)

## Machine Translation and Transliteration involving Related, Low-resource Languages



Anoop Kunchukuttan, Microsoft R&D India Pvt. Ltd, India and Pushpak Bhattacharyya, CSE Dept, IIT Bombay

This book discusses aspect of natural language processing: translation and transliteration involving related languages in a low-resource setting. This is relevant in real-world scenario for people living in neighbouring states/provinces/countries who speak similar languages and need to communicate, but training data to build supporting MT systems is limited. The book discusses different characteristics of related languages with rich examples and draws connections between two problems: translation for related languages and transliteration. It shows how linguistic similarities can be utilized to learn MT systems for related languages with limited data.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

September 2021: 6.14 x 9.21: 220pp

Hb: 978-0-367-56199-4: **£140.00**

eBook: 978-1-003-09677-1

\* For full contents and more information, visit: [www.routledge.com/9780367561994](http://www.routledge.com/9780367561994)

## Medical Internet of Things

Techniques, Practices and Applications



Edited by Anirban Mitra, Amity Univ, Jayanta Mondal, KIIT Univ and Anirban Das, UEM Kolkata

This book is an attempt to explore new ideas and novel techniques in area of Medical Internet of Things apart from basic concepts. The book is composed of fifteen chapters discussing the basic concepts, issues, challenges, case study and applications in MIoT. This book intends to offer novel advances and applications of MIoT in a precise and clear manner to the research community to achieve in depth knowledge in the field. This book will help those interested and intended researchers to keep insight into different concepts and their importance in multifaceted applications of real life. This has been done to make this book more flexible and to stimulate further interest in topics.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

October 2021: 7 x 10: 256pp

Hb: 978-0-367-33123-8: **£120.00**

eBook: 978-0-429-31807-8

\* For full contents and more information, visit: [www.routledge.com/9780367331238](http://www.routledge.com/9780367331238)

## Metaheuristic Algorithms in Industry 4.0

Edited by **Pritesh Shah, Ravi Sekhar, Anand J. Kulkarni**, Symbiosis Center for Research and Innovation, Pune, India and **Patrick Siarry**, Universite Paris-Est Creteil, France  
*Series: Advances in Metaheuristics*

This book addresses metaheuristics in all aspects of Industry 4.0. It covers metaheuristic applications in IoT, cyber physical systems, control systems, smart computing, artificial intelligence, sensor networks, robotics, cybersecurity, smart factory, predictive analytics and more.

*Metaheuristic Algorithms in Industry 4.0* provides a guiding light to engineers, researchers, students, faculty and other professionals engaged in exploring and implementing industry 4.0 solutions in various systems and processes.

CRC Press

**Market:** Computer Science  
 September 2021: 6.85 x 9.69: 302pp  
 Hb: 978-0-367-69839-3: **£99.99**  
 eBook: 978-1-003-14350-5

\* For full contents and more information, visit: [www.routledge.com/9780367698393](http://www.routledge.com/9780367698393)

## Network Forensics

Privacy and Security

**Anchit Bijalwan**

Network Forensics: A privacy & Security provides a significance knowledge of network forensics in different functions and spheres of the security. The book gives the complete knowledge of network security, all kind of network attacks, intention of an attacker, identification of attack, detection, its analysis, incident response, ethical issues, botnet and botnet forensics. This book also refer the recent trends that comes under network forensics. It provides in-depth insight to the dormant and latent issues of the acquisition and system live investigation too.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering  
 October 2021: 7 x 10: 280pp  
 Hb: 978-0-367-49361-5: **£120.00**  
 eBook: 978-1-003-04590-8

\* For full contents and more information, visit: [www.routledge.com/9780367493615](http://www.routledge.com/9780367493615)

## One-Week Dungeons

Diaries of a Seven-Day Roguelike Challenge

**David L. Craddock**

Told over a series of daily journal logs, One-Week Dungeons: Diaries of a Seven-Day Roguelike Challenge chronicles the journeys of eleven 7DRL participants as they race to build their dream games before the clock expires.

CRC Press

**Market:** Games and Animation  
 August 2021: 6 x 9: 168pp  
 Hb: 978-1-032-05246-5: **£68.99**  
 Pb: 978-1-032-05156-7: **£26.99**  
 eBook: 978-1-003-19672-3

\* For full contents and more information, visit: [www.routledge.com/9781032052465](http://www.routledge.com/9781032052465)

## Partnering with HMS: A Guide for App Developers

**Xihai Wang, Yue Wang and Hailiang Wu**

This is the first book to introduce the Huawei Mobile Services (HMS) ecosystem. This book is a quick start guides for kit integration and practical environment setup, detailing the functions and principles behind each kit. By showing the audiences how to integrate kits, the authors explain in detail Account Kit, IAP, Push Kit, Location Kit, Map Kit, Site Kit, Safety Detect, and FIDO.

CRC Press

**Market:** App development, Mobile app, Software  
 September 2021: 6 x 9: 508pp  
 Hb: 978-1-032-07393-4: **£99.99**  
 eBook: 978-1-003-20669-9

\* For full contents and more information, visit: [www.routledge.com/9781032073934](http://www.routledge.com/9781032073934)

4th Edition

## Practical Linear Algebra

A Geometry Toolbox

**Gerald Farin, Arizona State University, Tempe, USA and Dianne Hansford, FarinHansford R&D, Paradise Valley, Arizona, USA**

*Series: Textbooks in Mathematics*

Linear algebra is growing in importance. 3D entertainment, animations in movies and video games are developed using linear algebra. The Fourth Edition of this popular text introduces linear algebra in a comprehensive, geometric, and algorithmic way. The authors start with the fundamentals in 2D and 3D, then move on to higher dimensions, expanding on the fundamentals and introducing new topics, which are necessary for many real-life applications and the development of abstract thought. Applications are introduced to motivate topics. This practical approach to a linear algebra course, whether through classroom instruction or self-study, is unique to this book.

A K Peters/CRC Press

**Market:** Mathematics  
 July 2021: 592pp  
 Hb: 978-0-367-50784-8: **£74.99**  
 eBook: 978-1-003-05121-3  
 Prev. Ed Hb: 978-1-466-57956-9

\* For full contents and more information, visit: [www.routledge.com/9780367507848](http://www.routledge.com/9780367507848)



## Public Policy Analytics

Code and Context for Data Science in Government

**Ken Steif**

*Series: Chapman & Hall/CRC Data Science Series*

Public Policy Analytics: Code & Context for Data Science in Government teaches readers how to address complex public policy problems with data and analytics using reproducible methods in R. Each of the eight chapters provides a detailed case study, showing readers: how to develop exploratory indicators; understand 'spatial process' and develop spatial analytics; how to develop 'useful' predictive analytics; how to convey these outputs to non-technical decision-makers through the medium of data visualization; and why ultimately, data science and 'Planning' are one and the same.

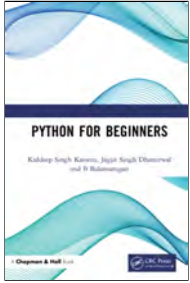
CRC Press

**Market:** Computer Science/Social Science  
 July 2021: 6.14 x 9.21: 248pp  
 Hb: 978-0-367-51625-3: **£110.00**  
 Pb: 978-0-367-50761-9: **£41.99**  
 eBook: 978-1-003-05465-8

\* For full contents and more information, visit: [www.routledge.com/9780367516253](http://www.routledge.com/9780367516253)



## Python for Beginners



Kuldeep Singh Kaswan, Galgotias Univ, Jagjit Singh Dhatteval, PDM Univ and B Balamurugan, Galgotias Univ  
Python is a powerful programming language that can be used to develop any specific application, right from the social media apps like Pinterest and Instagram, to research programming interfaces. Beginners can easily grasp the language as it has a relatively simple syntax and coding rules. This book starts out with a walkthrough of the basic Python elements and data structures, working through variables, strings, numbers, lists, and tuples, outlining how you work with each of them. It covers statements and logical tests followed by a dive into dictionaries along with user input, while loops, functions, classes, and file handling, as well as code testing and debugging.

Chapman and Hall/CRC

**Market:** Computer Science and Technology

November 2021: 6.14 x 9.21: 248pp

Hb: 978-1-032-06386-7: **£120.00**

eBook: 978-1-003-20203-5

\* For full contents and more information, visit: [www.routledge.com/9781032063867](http://www.routledge.com/9781032063867)

## Python Programming

A Practical Approach



Vijay Kumar Sharma, Vimal Kumar, Swati Sharma and Shashwat Pathak

Drawing on knowledge gained directly from teaching Computer Science as a subject and working on a wide range of projects related to ML, AI, Deep Learning and Block Chain; the authors have tried their best to present the skills for a Python programmer, and the readers can readily take up their specific problems from the area of interest and solve same with the help of Python. These include, but are not limited to, Operators, Control Flow, Strings, Functions, Module Processing, Object Oriented Programming, Exception and File Handling, Multithreading, Synchronization, Regular Expressions and Python

Database Programming in detail.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

September 2021: 7 x 10: 344pp

Hb: 978-1-032-02849-1: **£140.00**

eBook: 978-1-003-18550-5

\* For full contents and more information, visit: [www.routledge.com/9781032028491](http://www.routledge.com/9781032028491)

2nd Edition

## Ray Tracing from the Ground Up

Kevin Suffern and Helen H. Hu, Westminster College, Salt Lake City, Utah, USA

Recently, there has been a resurgent interest in ray tracing due to the capability of the GPU. Reflecting recent trends, this second edition uses Java as the language for writing the ray tracer. The authors explain all concepts and processes with the aid of hundreds of diagrams, ray-traced images, and sample code. A supporting website provides Java code and a Java version of the skeleton ray tracers. The text is suitable for computer graphics students as well as individual programmers who would like to learn ray tracing.

A K Peters/CRC Press

July 2021: 2.54 x 1.78: 800pp

Hb: 978-1-466-50848-4: **£57.99**

Prev. Ed Hb: 978-1-568-81272-4

\* For full contents and more information, visit: [www.routledge.com/9781466508484](http://www.routledge.com/9781466508484)

## Research Software Engineering with Python

Building software that makes research possible



Damien Irving, Kate Hertweck, Luke Johnston, Joel Ostblom, Charlotte Wickham and Greg Wilson

This book introduces the concepts, tools, and skills that researchers need to get more done in less time and with less pain. Based on the practical experiences of its authors, who collectively have spent several decades teaching software skills to scientists, it covers everything graduate-level researchers need to automate their workflows, collaborate with colleagues, ensure that their results are trustworthy, and publish what they have built so that others can build on it. The book assumes only a basic knowledge of Python as a starting point, and shows readers how it, the Unix shell, Git, Make, and related tools can give them

more time to focus on the research they actually want to do.

Chapman and Hall/CRC

**Market:** Software Engineering

July 2021: 6.14 x 9.21: 532pp

Hb: 978-0-367-69834-8: **£130.00**

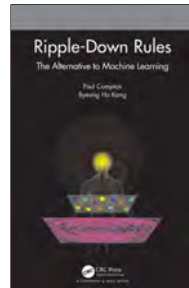
Pb: 978-0-367-69832-4: **£52.99**

eBook: 978-1-003-14348-2

\* For full contents and more information, visit: [www.routledge.com/9780367698348](http://www.routledge.com/9780367698348)

## Ripple-Down Rules

The Alternative to Machine Learning



Paul Compton, The University of New South Wales, Sydney, Australia and Byeong Ho Kang, University of Tasmania, Tasmania, Australia

Machine learning algorithms hold out extraordinary promise, but the reality is that their success depends entirely on the suitability of the data available. This book is about Ripple-Down Rules (RDR) an alternative manual technique for rapidly building AI systems. With a human in the loop, RDR is much better able to deal with the limitations of the data.

It has been proven in industrial application it takes only a minute or two per rule to build RDR systems with perhaps thousands of rules. The industrial uses of RDR have ranged from medical diagnosis, through data cleansing to chatbots in cars. RDR can be used standalone or to improve the performance of machine learning or other methods.

Chapman and Hall/CRC

**Market:** Computer Science

May 2021: 6.14 x 9.21: 196pp

Hb: 978-0-367-64766-7: **£130.00**

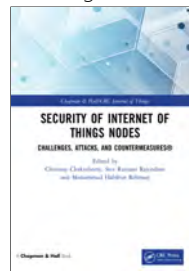
Pb: 978-0-367-64432-1: **£49.99**

eBook: 978-1-003-12615-7

\* For full contents and more information, visit: [www.routledge.com/9780367647667](http://www.routledge.com/9780367647667)

## Security of Internet of Things Nodes

Challenges, Attacks, and Countermeasures



Edited by Chinmay Chakraborty, BIRLA INSTITUTE OF TECHNOLOGY, INDIA., Sree Ranjani Rajendran, IIT Madras and Muhammad Habibur Rehman, Khalifa Univ., Abu Dhabi  
Series: Chapman & Hall/CRC Internet of Things

The book *Security of Internet of Things Nodes: Challenges, Attacks, and Countermeasures* covers a wide range of research topics on the security of the *Internet of Things* nodes along with the latest research development in the domain of *Internet of Things*. It also covers various algorithms, techniques, and schemes in the field of computer science with state-of-the-art tools and technologies. This book mainly focuses on the security challenges of the *Internet of Things* devices and the countermeasures to overcome security vulnerabilities.

Chapman and Hall/CRC

**Market:** IT

August 2021: 7 x 10: 320pp

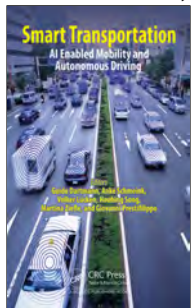
Hb: 978-0-367-65049-0: **£140.00**

eBook: 978-1-003-12759-8

\* For full contents and more information, visit: [www.routledge.com/9780367650490](http://www.routledge.com/9780367650490)

## Smart Transportation

AI Enabled Mobility and Autonomous Driving



Edited by **Guido Dartmann, Anke Schmeink, Volker Lücken, Houbing Song**, Embry-Riddle Aeronautical University, FL, USA, **Martina Ziefle** and **Giovanni Prestiflippo**

This book presents a review of the progress and latest applications of artificial intelligence in autonomous vehicles and its implementation in new hardware platforms. Furthermore, new concepts for mobility services based on this technology are presented and the social and human factors are discussed.

CRC Press

**Market:** Transportation Engineering

November 2021: 6.14 x 9.21: 256pp

Hb: 978-0-367-35296-7: **£133.00**

eBook: 978-0-367-80815-0

\* For full contents and more information, visit: [www.routledge.com/9780367352967](http://www.routledge.com/9780367352967)

## Software Engineering Perspectives in Computer Game Development



Edited by **Kendra M. L. Cooper**

Featuring contributions from leading experts in software engineering, this edited book provides a comprehensive introduction to computer game software development. It is a complex, interdisciplinary field that relies on contributions from a wide variety of disciplines including arts and humanities, behavioural sciences, business, engineering, physical sciences and mathematics, etc. The book focuses on the emerging research at the intersection of game and software engineering communities.

Chapman and Hall/CRC

**Market:** Information Technology

July 2021: 6.14 x 9.21: 312pp

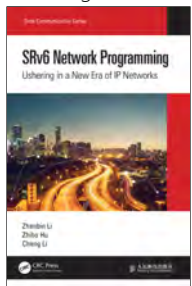
Hb: 978-1-138-50378-6: **£99.99**

eBook: 978-1-315-14554-9

\* For full contents and more information, visit: [www.routledge.com/9781138503786](http://www.routledge.com/9781138503786)

## SRv6 Network Programming

Ushering in a New Era of IP Networks



**Zhenbin Li, Zhibo Hu and Cheng Li**

*Series: Data Communication Series*

The book collects the research results of Huawei SRv6 experts and reflects the latest development direction of SRv6. Beginning with the challenges for IPv6 network development, the background, design roadmap, and implementation of SRv6, as well as the application of this technology in traditional and emerging services is described. With rich, clear, practical, and easy-to-understand content, the volume is intended for network planning engineers, technical support engineers and network administrators who need a grasp of the most cutting-edge IP network technology. It is also intended for communications network researchers in scientific research institutions and

universities.

CRC Press

**Market:** Computer Science, Communication Technology, Computer Applications

June 2021: 6 x 9: 656pp

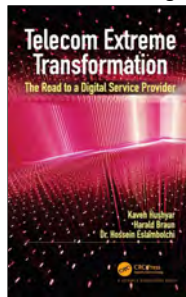
Hb: 978-1-032-01624-5: **£120.00**

eBook: 978-1-003-17939-9

\* For full contents and more information, visit: [www.routledge.com/9781032016245](http://www.routledge.com/9781032016245)

## Telecom Extreme Transformation

The Road to a Digital Service Provider



**Kaveh Hushyar, Harald Braun and Hossein Eslambolchi**

The next wave of telecommunication and service provider transformations will be very different, we call it extreme transformation, in that the communication service providers (CSP) have to become a Digital Service Provider (DSP) to stay relevant. In the DSP world, customers are not just 'human beings', but it also includes billions of sensors and IoT devices that will be revolutionizing digital lifestyle with relevant content enabled by data mining, and leading to decision making, and entertainment.

CRC Press

**Market:** Telecommunications

July 2021: 6.14 x 9.21: 258pp

Hb: 978-0-367-75013-8: **£85.00**

eBook: 978-1-003-16074-8

\* For full contents and more information, visit: [www.routledge.com/9780367750138](http://www.routledge.com/9780367750138)

## The Art of Algorithm Design

**Sachi Nandan Mohanty**, College of Engg., Pune, **Pabitra Kumar Tripathy**, KIT Berhampur and **Suneeta Satpathy**, CE Bhubaneswar

The Art of Algorithm design is a complementary perception of all books on Algorithm design and is a roadmap for all levels of learners as well as professionals dealing with algorithmic problems. All Algorithms are described and designed with a "pseudocode" to be readable by anyone with little acquaintances of programming. This book is designed with an objective to be both versatile and complete as it traverses through step-by-step concepts and methods for analyzing each algorithmic complexity with pseudo code examples. Moreover, the book provides with an enjoyable primer to the field of algorithms. It is designed for undergraduates and postgraduates studying algorithm design.

Chapman and Hall/CRC

**Market:** Computer Science and Engineering

October 2021: 6 x 9: 160pp

Hb: 978-0-367-55511-5: **£89.99**

eBook: 978-1-003-09388-6

\* For full contents and more information, visit: [www.routledge.com/9780367555115](http://www.routledge.com/9780367555115)

## The Cloud Computing Book

The Future of Computing Explained



**Douglas Comer**

The latest textbook from best-selling author, Douglas Comer, this class-tested book provides a comprehensive introduction to cloud computing. Focusing on concepts and principles, rather than commercial offerings by cloud providers and vendors, the text gives readers a complete picture of the advantages and growth of cloud computing, cloud infrastructure, virtualization, automation and orchestration, and cloud-native software design.

Chapman and Hall/CRC

**Market:** Cloud Computing

July 2021: 287pp

Hb: 978-0-367-70680-7: **£74.99**

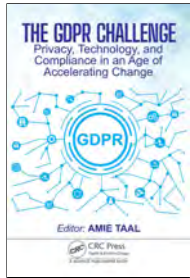
eBook: 978-1-003-14750-3

\* For full contents and more information, visit: [www.routledge.com/9780367706807](http://www.routledge.com/9780367706807)



## The GDPR Challenge

Privacy, Technology, and Compliance in an Age of Accelerating Change



Edited by **Amie Taal**

The book is a compilation of authoritative perspectives on General Data Protection Regulation (GDPR) of experts from Industry, Law (EU and US), Academia, Banks, Cyber Security, Digital Forensics, eDiscovery, Investigations, and Cyber Insurance. Adhering to data privacy regulations and legislations is a must and this book provides clarity and answers to questions on this subject.

CRC Press

**Market:** Statistics

November 2021: 6.14 x 9.21: 258pp

Hb: 978-0-367-25726-2: **£74.99**

eBook: 978-0-429-32593-9

\* For full contents and more information, visit: [www.routledge.com/9780367257262](http://www.routledge.com/9780367257262)

## The Power of Geometric Algebra Computing for Engineering and Quantum Computing

Dietmar Hildenbrand

Geometric Algebra is a very powerful mathematical system for an easy and intuitive treatment of geometry, but the community working with it is still very small. The main goal of this book is to close this gap from a computing perspective in presenting the power of Geometric Algebra Computing for engineering applications and quantum computing.

*The Power of Geometric Algebra Computing for Engineering and Quantum Computing* is based on GAALOPWeb, a new user-friendly, web-based tool for the generation of optimized code for different programming languages as well as for the visualization of Geometric Algebra algorithms for a wide range of engineering applications.

Chapman and Hall/CRC

**Market:** Computing

September 2021: 6 x 9: 208pp

Hb: 978-0-367-68458-7: **£74.99**

eBook: 978-1-003-13900-3

\* For full contents and more information, visit: [www.routledge.com/9780367684587](http://www.routledge.com/9780367684587)

## Transfer Learning through Embedding Spaces

Mohammad Rostami



*Transfer Learning through Embedding Spaces* provides a brief background on transfer learning and then focus on the idea of transferring knowledge through intermediate embedding spaces. The idea is to couple and relate different learning through embedding spaces that encode task-level relations and similarities. We cover various machine learning scenarios and demonstrate that this idea can be used to overcome challenges of zero-shot learning, few-shot learning, domain adaptation, continual learning, lifelong learning, and collaborative learning.

Chapman and Hall/CRC

**Market:** Computer Science

June 2021: 7 x 10: 220pp

Hb: 978-0-367-69905-5: **£74.99**

eBook: 978-1-003-14603-2

\* For full contents and more information, visit: [www.routledge.com/9780367699055](http://www.routledge.com/9780367699055)

## Virus Bioinformatics



Edited by **Dmitrij Frishman** and **Manja Marz**

Series: *Chapman & Hall/CRC Computational Biology Series*

*Virus Bioinformatics* reviews state-of-the-art bioinformatics algorithms and recent advances in data analysis in virology.

**Key Features:**

Contributions from leading international experts in the field. Discusses open questions and urgent needs. Covers a broad spectrum of topics including evolution, structure, and function of viruses, including coronaviruses.

The book will be of great interest to computational biologists wishing to venture into the rapidly advancing field of virus bioinformatics as well as to virologists interested in acquiring basic bioinformatics skills to support their wet lab work.

Chapman and Hall/CRC

**Market:** Computer Science/Biology

August 2021: 6.14 x 9.21: 296pp

Hb: 978-0-367-55860-4: **£57.99**

eBook: 978-1-003-09767-9

\* For full contents and more information, visit: [www.routledge.com/9780367558604](http://www.routledge.com/9780367558604)

2nd Edition

## V-Ray 5 for 3ds Max 2020

3D Rendering Workflows Volume 1



**Jamie Cardoso**, 3D Consultant, variety of professional organizations worldwide

Series: *3D Photorealistic Rendering*

Increase the photorealism of your 3d visualizations with enhanced toolsets of V-Ray 5 for 3ds Max 2020. The book is filled with colourful illustrations depicting step-by-step tutorials about the process of creating a photorealistic day and night exterior scenes.

Each tutorial includes a 3d project scene to guide users through the production and the post-production process.

CRC Press

**Market:** Architecture

June 2021: 7 x 10: 836pp

Hb: 978-0-367-72429-0: **£130.00**

Pb: 978-0-367-62550-4: **£52.99**

eBook: 978-1-003-15476-1

\* For full contents and more information, visit: [www.routledge.com/9780367724290](http://www.routledge.com/9780367724290)

2nd Edition

## Writing for Animation, Comics, and Games



**Christy Marx**, Christy Marx is an interactive writer, story editor, series developer and game designer based in LA. Her credits include: Babylon 5; The Twilight Zone; He-Man; X-Men Evolution and Lord of the Rings.

This second edition of *Writing for Animation, Comics, and Games* expounds on the previous edition with more information on how to construct narratives for these three forms of visual storytelling media.

CRC Press

**Market:** Games and Animation

August 2021: 7 x 10: 312pp

Hb: 978-0-815-37938-6: **£115.00**

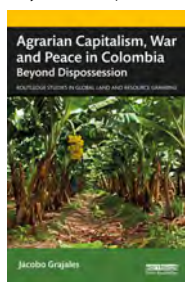
Pb: 978-0-815-37937-9: **£38.99**

eBook: 978-1-351-21598-5

\* For full contents and more information, visit: [www.routledge.com/9780815379386](http://www.routledge.com/9780815379386)

## Agrarian Capitalism, War and Peace in Colombia

Beyond Dispossession



Jacobo Grajales

Series: *Routledge Studies in Global Land and Resource Grabbing*

While land remains a key resource at the core of many contemporary civil wars, the impact of high intensity armed violence on the formation of agrarian capitalism is seldom discussed. Drawing on nearly two hundred interviews, this book examines land grabbing and the role of violence in capital with a particular focus on one key actor in the Colombian civil war: paramilitary militias. The book is essential reading for students, scholars and development aid practitioners interested in land and resource grabbing, agrarian capitalism, civil wars and conflict resolution.

Routledge

Market: Resource Grabbing / Agrarian Capitalism / War and Conflict

June 2021: 6.14 x 9.21: 190pp

Hb: 978-0-367-46963-4: £120.00

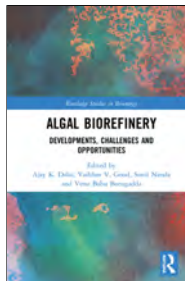
Pb: 978-0-367-67570-7: £34.99

eBook: 978-1-003-03223-6

\* For full contents and more information, visit: [www.routledge.com/9780367469634](http://www.routledge.com/9780367469634)

## Algal Biorefinery

Developments, Challenges and Opportunities



Edited by **Ajay K. Dalai**, Department of Chemical and Biological Engineering, University of Saskatchewan, Saskatoon, Canada, **Vaibhav V. Goud**, **Sonil Nanda** and **Venu Babu Borugadda**

Series: *Routledge Studies in Bioenergy*

This book enables readers to understand the theoretical aspects, key steps and scientific techniques with a detailed mechanism to produce biofuels from algae. Each chapter provides the latest developments and recent advancements starting from algal cultivation techniques to the production of value-added green fuels, chemicals and products with wide applications.

Routledge

Market: Bioenergy / Sustainable Development / Agricultural Engineering

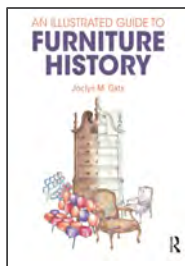
July 2021: 6.14 x 9.21: 346pp

Hb: 978-0-367-57005-7: £120.00

eBook: 978-1-003-10031-7

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## An Illustrated Guide to Furniture History



Joclyn M. Oats

This book provides upper-level students and instructors with an alternative visual analytical approach to learning about furniture history from antiquity to post-modernism. Following an immersive teaching model, it presents a nine-step methodology to help strengthen students' visual literacy and quickly acquire subject area knowledge. Moving chronologically through key periods in furniture history and interior design, such as the Renaissance, the Arts & Crafts Movement and Modernism, it traverses from Europe to America to present a comprehensive foundational guide to the history of furniture design.

Routledge

Market: Product Design / History

July 2021: 6.85 x 9.69: 386pp

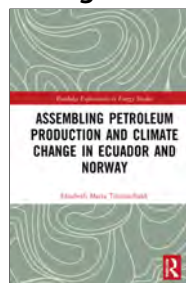
Hb: 978-0-367-40655-4: £120.00

Pb: 978-0-367-40656-1: £29.99

eBook: 978-0-367-80829-7

\* For full contents and more information, visit: [www.routledge.com/9780367406554](http://www.routledge.com/9780367406554)

## Assembling Petroleum Production and Climate Change in Ecuador and Norway



Elisabeth Marta Tømmerbakk

Series: *Routledge Explorations in Energy Studies*

In this book, Elisabeth Marta Tømmerbakk explores why a transition towards a post-carbon society is so difficult to accomplish by examining how the relationship between petroleum production and climate change is politically framed and negotiated in contested cases. This question is approached through a process-oriented comparative case study of Lofoten, located in the Norwegian Sea above the Arctic Circle, and Yasuni-ITT (Ishpingo, Tambococho and Tiputini) located in the Ecuadorian Amazon. This book will be of great interest to students and scholars of petroleum production, climate change, environmental policy and environmental sociology.

Routledge

Market: Climate change/Resource Extraction/Energy

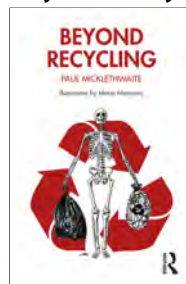
August 2021: 6.14 x 9.21: 236pp

Hb: 978-0-367-60780-7: £120.00

eBook: 978-0-367-60781-4

\* For full contents and more information, visit: [www.routledge.com/9780367607807](http://www.routledge.com/9780367607807)

## Beyond Recycling



Paul Micklethwaite

*Beyond Recycling* critically explores unasked questions around recycling and its prominent position in contemporary thinking about sustainability. It challenges assumptions about why we appear to have committed to recycling as a cultural project. The social, cultural and even environmental value of recycling has not been considered carefully enough. This book considers recycling as a contemporary cultural idea related to - but not wholly defined by - our response to material waste. *Beyond Recycling* is a fascinating read for conscious consumers and students in the creative arts, design, cultural studies, sustainability and environmental studies.

Routledge

Market: Environment / Sustainability

May 2021: 5.06 x 7.81: 170pp

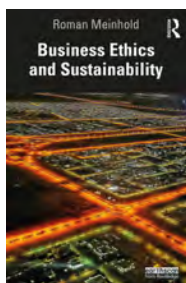
Hb: 978-0-367-90388-6: £70.00

Pb: 978-0-367-90387-9: £21.99

eBook: 978-1-003-02408-8

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## Business Ethics and Sustainability



Roman Meinhold

This book equips readers with the knowledge, insights and key capabilities to understand and practice business activities from ethical and sustainable vantage points. It introduces the theory and practice of ethical and sustainable business, focusing in particular on eco-environmental sustainability, intergenerational responsibilities, current disruptive technologies, and intercultural values of the business community and consumers. This book will be of great interest to students of business ethics, environmental ethics, applied ethics and sustainable development, as well as business practitioners striving toward ethical, sustainable and responsible business practice.

Routledge

Market: Business Ethics/Sustainable Development

November 2021: 6.14 x 9.21: 208pp

Hb: 978-0-367-65058-2: £120.00

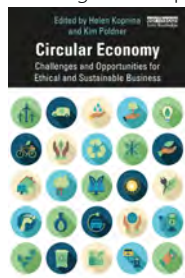
Pb: 978-0-367-65060-5: £34.99

eBook: 978-1-003-12765-9

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## Circular Economy

Challenges and Opportunities for Ethical and Sustainable Business



Edited by **Helen Kopnina**, University of Amsterdam, The Netherlands and **Kim Poldner**

How can we design circular business models? How can we organize the transition from a linear to a circular economy? And how can we imagine circular futures that help us transform current realities? This book aims to provide answers to these questions while addressing the challenges and opportunities of the circular economy. Offering points of reference for continued critical discourse and examples of practically applicable sustainability solutions, this book will be of great interest to students, teachers, practitioners and scholars of circular economy.

Routledge

**Market:** Sustainable Business/Environment and Sustainability Studies

August 2021: 6.14 x 9.21: 254pp

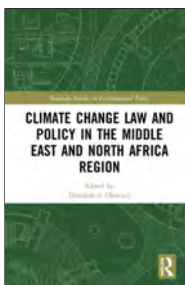
Hb: 978-0-367-41866-3: **£120.00**

Pb: 978-0-367-41864-9: **£34.99**

eBook: 978-0-367-81665-0

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## Climate Change Law and Policy in the Middle East and North Africa Region



Edited by **Damilola S. Olawuyi**

*Series: Routledge Studies in Environmental Policy*

This book provides an in-depth and authoritative examination of the guiding principles of climate change law and policy in the MENA region. It introduces readers to the latest developments in the regulation of climate change across the region, including the applicable legislation, institutions, and key legal innovations in climate change financing, infrastructure development and education. Taking an international and comparative approach, this book will be of great interest to students, scholars and practitioners who work in the areas of climate change, environmental law and policy, and sustainable development, particularly in relation to the MENA region.

Routledge

**Market:** climate change/environmental law and policy

July 2021: 6.14 x 9.21: 342pp

Hb: 978-0-367-49032-4: **£120.00**

eBook: 978-1-003-04410-9

\* For full contents and more information, visit: [www.routledge.com/9780367490324](http://www.routledge.com/9780367490324)

## Close Reading the Anthropocene



Edited by **Helena Feder**

Reading literature new and old, images and art, literary and critical theory, science and cultural studies, this book explores question of meaning, its importance and immanent potential for loss, in the new geological epoch of the Anthropocene. Moving between places, rocks, plants, animals, atmosphere, and eclipses, this interdisciplinary edited collection grounds the complex relations between text and world in the environmental humanities. The volume's wide-ranging chapters are critical, often polemical, engagements with the question of the Anthropocene and the changing conversation around reading, interpretation, and textuality.

Routledge

**Market:** Environment / Literature

June 2021: 6.14 x 9.21: 202pp

Hb: 978-0-367-46660-2: **£120.00**

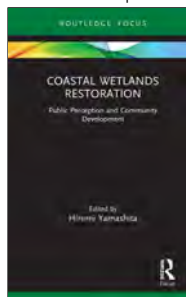
Pb: 978-0-367-46659-6: **£34.99**

eBook: 978-1-003-03027-0

\* For full contents and more information, visit: [www.routledge.com/9780367466602](http://www.routledge.com/9780367466602)

## Coastal Wetlands Restoration

Public Perception and Community Development



Edited by **Hiromi Yamashita**

*Series: Routledge Focus on Environment and Sustainability*

For conservationists, tidal flats and coastal wetlands are regarded as among the most important areas to conserve for the health of the entire oceanic environment. As the number of restoration projects all over the world increases, this book provides a unique assessment of coastal wetland restorations by examining existing community perceptions and by drawing on the knowledge and expertise of both academics and practitioners.

Routledge

**Market:** Coastal Management / Conservation / Environmental Sociology

July 2021: 5.5 x 8.5: 176pp

Hb: 978-0-367-86308-1: **£44.99**

eBook: 978-0-367-86309-8

\* For full contents and more information, visit: [www.routledge.com/9780367863081](http://www.routledge.com/9780367863081)

## Communicating Climate Change

Making Environmental Messaging Accessible

Edited by **Juita-Elena (Wie) Yusuf** and **Burton St. John III**

*Series: Routledge Studies in Environmental Communication and Media*

This book focuses on theoretical and applied observations concerning how experts, advocates, and institutions make climate change information accessible to different audiences. It concentrates on three key elements of climate change communication – access, relevance, and understandability – to provide an understanding of how these elements allow multiple groups of stakeholders to act on the information to build resilience. This book will be of great interest to students and researchers of climate change and environmental communication, as well as practitioners interested in understanding how to better engage stakeholders through climate change-related communication.

Routledge

**Market:** Climate Change/Environmental Communication

November 2021: 6.14 x 9.21: 240pp

Hb: 978-0-367-47952-7: **£120.00**

Pb: 978-0-367-47953-4: **£29.99**

eBook: 978-1-003-03737-8

\* For full contents and more information, visit: [www.routledge.com/9780367479527](http://www.routledge.com/9780367479527)

## Communicating Endangered Species

Extinction, News and Public Policy



Edited by **Eric Freedman**, Michigan State University, USA, **Sara Shipley Hiles** and **David B. Sachsman**

*Series: Routledge Studies in Environmental Communication and Media*

Extinction isn't new. However, the pace of extinction is accelerating globally. *Communicating Endangered Species: Extinction, News, and Public Policy* is a multidisciplinary environmental communication book that takes a distinctive approach by connecting how media and culture depict and explain endangered species with how policymakers and natural resource managers can or do respond to these challenges in practical terms.

Routledge

**Market:** Conservation / Environmental Communication / Media

August 2021: 6.14 x 9.21: 302pp

Hb: 978-0-367-48621-1: **£120.00**

eBook: 978-1-003-04195-5

\* For full contents and more information, visit: [www.routledge.com/9780367486211](http://www.routledge.com/9780367486211)

## Corporate Responsibility and Sustainable Development

An Integrative Perspective



Edited by **Lez Rayman-Bacchus**, University of Winchester, UK, and **Philip R Walsh**, Ryerson University, Canada

This textbook explores the overlapping interests of corporate responsibility and sustainable development, specifically focusing on the dynamics of social change, sustainable governance and evaluation, and creating social value. Written by two highly experienced authors, this book integrates short case studies and chapter questions throughout the text, in order to reinforce learning and help students reconcile ideas presented with real world issues. An essential resource for advanced undergraduate and postgraduate students of business, governance and corporate governance, CSR, sustainability and sustainable development, stakeholder theory, business ethics, and politics.

Routledge

**Market:** Environment/Sustainability/Business

July 2021: 6.14 x 9.21: 288pp

Hb: 978-1-138-30771-1: **£120.00**

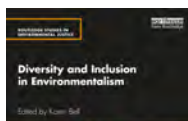
Pb: 978-1-138-30772-8: **£32.99**

eBook: 978-1-315-14252-4

\* For full contents and more information, visit: [www.routledge.com/9781138307711](http://www.routledge.com/9781138307711)



## Diversity and Inclusion in Environmentalism



Edited by **Karen Bell**, University of West England

Series: *Routledge Studies in Environmental Justice*

This book discusses how to develop green transitions which benefit, include and respect marginalised social groups. It explores the challenge of taking into account issues of equity and justice in the green transformation. Overall, this book supports environmental academics and practitioners to choose and campaign for effective, equitable and widely supported environmental policy, thereby enabling a smoother transition to sustainability. This volume will be of great interest to students, scholars and practitioners of environmental justice, social and environmental policy, planning and environmental sociology.

Routledge

**Market:** Environmental Justice/Social Policy

June 2021: 6.14 x 9.21: 184pp

Hb: 978-0-367-56730-9: **£120.00**

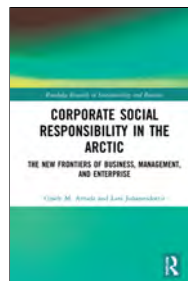
Pb: 978-0-367-56735-4: **£34.99**

eBook: 978-1-003-09918-5

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## Corporate Social Responsibility in the Arctic

The New Frontiers of Business, Management, and Enterprise



Edited by **Gisele M. Arruda** and **Lara Johannsdottir**

Series: *Routledge Research in Sustainability and Business*

This book considers the new trends and frontiers of Corporate Social Responsibility (CSR) studies that are shaping the future of global business strategy and ethics. It presents traditional and contemporary models of CSR through case studies of the eight Arctic nations and explores the debates concerning social responsibility and ethical dilemmas related to social and environmental aspects of business operations, society, and ecosystems. This book will be of great interest to students and scholars of CSR, sustainable business and business ethics.

Routledge

**Market:** CSR/Sustainable Business/Arctic

August 2021: 6.14 x 9.21: 240pp

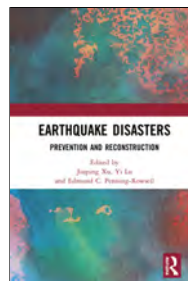
Hb: 978-0-367-52915-4: **£120.00**

eBook: 978-1-003-07981-1

\* For full contents and more information, visit: [www.routledge.com/9780367529154](http://www.routledge.com/9780367529154)

## Earthquake Disasters

Prevention and Reconstruction



Edited by **Jiuping Xu**, **Yi Lu** and **Edmund C. Penning-Rowsell**, Middlesex University, UK

This book explores practices and approaches on pre-disaster prevention and post-disaster reconstruction for vulnerable countries and areas enhancing earthquake disaster resilience. The chapters in this edited volume contribute to the literature of earthquake disaster research from scientific, social and institutional aspects.

These nine distinctive chapters have been elaborately selected and integrated from the international, ranked, peer-reviewed journal, *Environmental Hazards*.

Routledge

**Market:** Disaster Management

September 2021: 6.85 x 9.69: 204pp

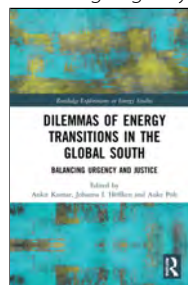
Hb: 978-1-032-00248-4: **£120.00**

eBook: 978-1-003-17332-8

\* For full contents and more information, visit: [www.routledge.com/9781032002484](http://www.routledge.com/9781032002484)

## Dilemmas of Energy Transitions in the Global South

Balancing Urgency and Justice



Edited by **Ankit Kumar**, **Johanna Höffken** and **Auke Pols**

Series: *Routledge Explorations in Energy Studies*

This book explores how in the wake of the Anthropocene, the growing call for urgent decarbonisation and accelerated energy transitions might have unintended consequences for energy poverty, justice and democracy, especially in the global South. It examines case studies from countries including Bolivia, Sri Lanka, India, Ghana and Lebanon in order to expand our understanding of what energy transitions are, and how just energy transitions can be done in different parts of the world. This volume will be of great interest to students and scholars of energy transitions, environmental justice, climate change and developing countries.

Routledge

**Market:** Energy/Environmental Justice

June 2021: 6.14 x 9.21: 182pp

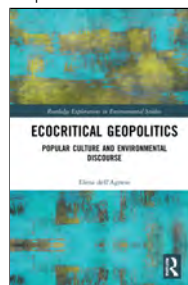
Hb: 978-0-367-48644-0: **£120.00**

eBook: 978-0-367-48645-7

\* For full contents and more information, visit: [www.routledge.com/9780367486440](http://www.routledge.com/9780367486440)

## Ecocritical Geopolitics

Popular culture and environmental discourse



Edited by **Elena dell'Agnese**

Series: *Routledge Explorations in Environmental Studies*

What is the role of popular culture in shaping our discourse about the multifaceted system of material things, subjects and causal agents that we call "environment"? *Ecocritical Geopolitics* offers a new theoretical perspective and approach to the analysis of environmental discourse in popular culture.

Referencing sources as diverse as *The Road*, *The Shape of Water*, *Lady and the Tramp* and tv cooking shows, this book will be of great interest to students and scholars of geography, environmental studies, film studies and environmental humanities.

Routledge

**Market:** Environmental Humanities / Ecocriticism

May 2021: 6.14 x 9.21: 228pp

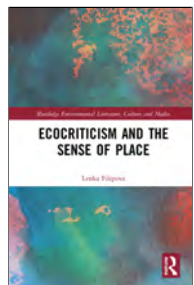
Hb: 978-0-367-26499-4: **£120.00**

Pb: 978-1-032-01074-8: **£36.99**

eBook: 978-0-429-29350-4

\* For full contents and more information, visit: [www.routledge.com/9780367264994](http://www.routledge.com/9780367264994)

## Ecocriticism and the Sense of Place



Lenka Filipova

Series: *Routledge Environmental Literature, Culture and Media*

The book is an investigation into the ways in which ideas of place are negotiated, contested and refigured in environmental writing at the turn of the twenty-first century. It focuses on the notion of place as a way of interrogating the socio-political and environmental pressures that have been seen as negatively affecting our environments since the advent of modernity, as well as the solutions that have been given as an antidote to those pressures. This book will appeal to researchers working in the fields of the environmental humanities, postcolonial studies, indigenous studies and comparative literature.

Routledge

Market: Environmental Humanities / Literature

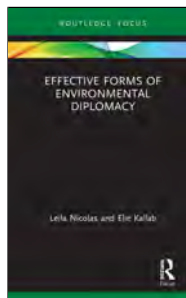
August 2021: 6.14 x 9.21: 184pp

Hb: 978-0-367-75458-7: **£120.00**

eBook: 978-1-003-16256-8

\* For full contents and more information, visit: [www.routledge.com/9780367754587](http://www.routledge.com/9780367754587)

## Effective Forms of Environmental Diplomacy



Leila Nicolas and Elie Kallab

Series: *Routledge Focus on Environment and Sustainability*

The book begins by critically analysing the existing system of international environmental treaties – which covers issues such as climate change and sustainable food systems- and highlights political and legal gaps. It then goes on to examine specific case studies from Lebanon, Bosnia and Herzegovina, the USA and Italy to critique examples of the diplomatic model followed by different states. Through this case study analysis, the book develops both theoretical and empirical frameworks that can be applied in order to study how international and regional organizations and NGOs maintain and put forward environmental agendas at an international level.

Routledge

Market: Environmental Diplomacy/Governance

June 2021: 5.5 x 8.5: 74pp

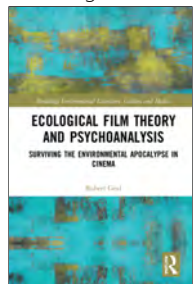
Hb: 978-0-367-47163-7: **£44.99**

eBook: 978-1-003-03386-8

\* For full contents and more information, visit: [www.routledge.com/9780367471637](http://www.routledge.com/9780367471637)

## Ecological Film Theory and Psychoanalysis

Surviving the Environmental Apocalypse in Cinema



Robert Geal

Series: *Routledge Environmental Literature, Culture and Media*

*Ecological Film Theory and Psychoanalysis* argues that these films exploit cinema's inherent Cartesian grammar to construct texts in which not only small groups of protagonist survivors, but also vicarious spectators, pleurably transcend the fictionalised destruction. This book applies ecolinguistics and psychoanalysis to explore how films fictionalising environmental disasters provide spectacular warnings against the dangers of environmental apocalypse, while highlighting that even these apparently environmentally friendly films can still facilitate problematic real-world changes in how people treat the environment.

Routledge

Market: Film / Film Theory

July 2021: 6.14 x 9.21: 288pp

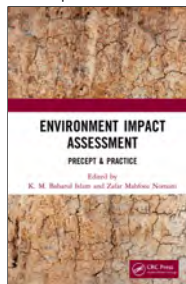
Hb: 978-0-367-37341-2: **£120.00**

eBook: 978-0-367-37342-9

\* For full contents and more information, visit: [www.routledge.com/9780367373412](http://www.routledge.com/9780367373412)

## Environment Impact Assessment

Precept & Practice



Edited by K. M. Baharul Islam and Zafar Mahfooz Nomani

This book deals with theoretical, practical, managerial and legal issues in multidisciplinary holism to suit Indian environmental planning and governance. It is laced with polemical issues in dexterous detail to cater erudite demand of environmental planners besides fulfilling the void of curriculum and pedagogic requirements of technical universities, environmental management and legal studies. It combines theoretical postulate with deeper empiricism and penetrative case studies to make an intriguing subject with greater ease and lucidity. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

Market: Environmental Science

June 2021: 6 x 9: 362pp

Hb: 978-1-032-05582-4: **£120.00**

eBook: 978-1-003-19820-8

\* For full contents and more information, visit: [www.routledge.com/9781032055824](http://www.routledge.com/9781032055824)

## Ecological Limits of Development

Living with the Sustainable Development Goals

Kaitlin Kish and Stephen Quilley, University of Waterloo, Canada

Series: *Routledge Studies in Sustainable Development*

Since the 1970s, mainstream approaches to sustainable development have sought to reconcile ecological constraints with modernization through much vaunted and seldom demonstrated strategies of 'decoupling' and 'dematerialization.' In this context, the UN Sustainable Development Goals (SDGs) have become the orchestrating drivers of sustainability governance. However, biophysical limits are not so easily side-stepped. Building on an ecological-economic critique of mainstream economics, and a historical-sociological understanding of state-formation, this book explores the implications of ecological limits for modern progressive politics.

Routledge

Market: Environmental Economics / Sustainable Development

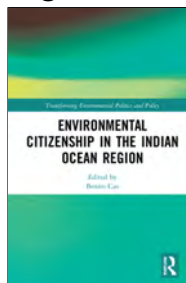
November 2021: 6.14 x 9.21: 280pp

Hb: 978-0-367-54059-3: **£120.00**

eBook: 978-1-003-08752-6

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## Environmental Citizenship in the Indian Ocean Region



Edited by Benito Cao

Series: *Transforming Environmental Politics and Policy*

This book explores environmental citizenship and civil society responses to environmental challenges in the Indian Ocean region. The articles provide practical insights to improve resilience and adaptation, as well as conceptual insights into the nature of environmental citizenship discourse and practice across this vast region, from Mauritius to Malaysia. It provides a rich, diverse and multidimensional picture of environmental citizenship in the Indian Ocean region.

The chapters in this book were originally published as a special issue in the *Journal of the Indian Ocean Region*.

Routledge

Market: Environment and Sustainability

June 2021: 6.85 x 9.69: 130pp

Hb: 978-0-367-75777-9: **£120.00**

eBook: 978-1-003-16396-1

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## Environmental Defenders

Deadly Struggles for Life and Territory



Edited by **Mary Menton** and **Philippe Le Billon**

Series: *Routledge Explorations in Environmental Studies*

Between 2002 and 2019, at least two thousand people were killed in 57 countries for defending their lands and the environment. Recent policy initiatives and media coverage have provided much needed attention to the protection and support of defenders, but there has so far been little scholarly work. This edited volume explains who these defenders are, what threats they face and what can be done to help support and protect them. This book is essential for all interested in understanding the challenges faced by environmental defenders and how to help and support them.

Routledge

Market: Environment / Development Studies / Human Rights

June 2021: 6.14 x 9.21: 298pp

Hb: 978-0-367-64970-8: **£120.00**

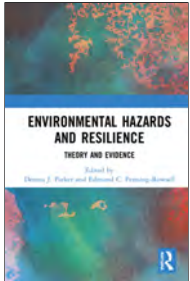
Pb: 978-0-367-64964-7: **£29.99**

eBook: 978-1-003-12722-2

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## Environmental Hazards and Resilience

Theory and Evidence



Edited by **Dennis J. Parker** and **Edmund C. Penning-Rowsell**, Middlesex University, UK

*Environmental Hazards and Resilience: Theory and Evidence* considers the scientific and theoretical challenges of making progress in applying resilience to environmental hazard mitigation and provides examples from around the world – including the USA, New Zealand, China, Bangladesh and elsewhere.

The chapters in this book were originally published in the *Environmental Hazards*.

Routledge

Market: Environment and Sustainability

August 2021: 6.85 x 9.69: 248pp

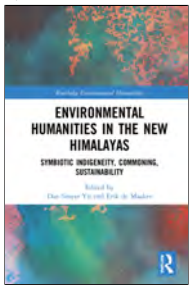
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## Environmental Humanities in the New Himalayas

Symbiotic Indigeneity, Commoning, Sustainability



Edited by **Dan Smyer Yü** and **Erik de Maaker**

Series: *Routledge Environmental Humanities*

This book showcases how the eco-geological creativity of the earth is integrally woven into the landforms, cultures, and cosmologies of modern Himalayan communities, featuring case studies from Bhutan, Assam, Sikkim, Tibet, Nepal, Pakistan, and Sino-Indian borderlands, many of which are documented by authors from indigenous Himalayan communities. It explores three environmental characteristics of modern Himalayas: the anthropogenic, the indigenous, and the animist. This book will be of great interest to students and scholars of environmental humanities, religion and ecology, indigenous knowledge and sustainable development more broadly.

Routledge

Market: Environmental Humanities/Sustainable Development

June 2021: 6.14 x 9.21: 308pp

Hb: 978-0-367-69979-6: **£120.00**

eBook: 978-1-003-14411-3

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## Environmental Justice in the Anthropocene

From (Un)Just Presents to Just Futures



Edited by **Stacia Ryder**, **Kathryn Powlen**, **Melinda Laituri**, **Stephanie A. Malin**, **Joshua Sbicca** and **Dimitris Stevis**

Series: *Routledge Studies in Environmental Justice*

Through various international case studies presented by both practitioners and scholars, *Environmental Justice in the Anthropocene* explores how an environmental justice approach is necessary for reflections on inequality in the Anthropocene and for forging societal transitions toward a more just and sustainable future. The contributors focus on a critical approach to power and issues of environmental injustice across time, space, and context—drawing from twelve national contexts: Austria, Bangladesh, Chile, China, India, Nicaragua, Hungary, Mexico, Brazil, Sweden, Tanzania, and the United States.

Routledge

Market: Environment/Environmental Justice

June 2021: 6.14 x 9.21: 358pp

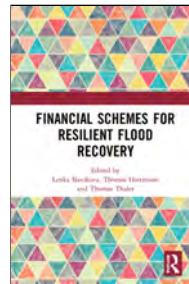
Hb: 978-0-367-90294-0: **£120.00**

Pb: 978-0-367-90288-9: **£34.99**

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## Financial Schemes for Resilient Flood Recovery



Edited by **Lenka Slavíková**, **Thomas Hartmann**, Utrecht University, Netherlands and **Thomas Thaler**

This book investigates how the implementation of financial schemes (government relief subsidies, insurance schemes, buy-outs, etc.) might increase flood resilience. The book covers different approaches to flood recovery schemes with specific intervention rationales in different countries. This diversity of state-funded schemes, private-based insurance schemes and hybrids as well as planned relocation schemes indicates a lack of a consistent and strategic approach in flood risk management and flood resilience about flood recovery.

The chapters in this book were originally published in the *Environmental Hazards*.

Routledge

Market: Environment and Sustainability

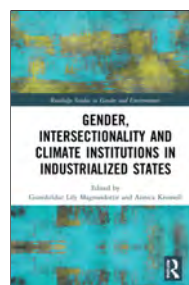
August 2021: 6.85 x 9.69: 164pp

Hb: 978-1-032-01756-3: **£120.00**

eBook: 978-1-003-17986-3

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## Gender, Intersectionality and Climate Institutions in Industrialised States



Edited by **Gunnhildur Lily Magnúsdóttir** and **Annica Kronsell**, Lund University, Sweden

Series: *Routledge Studies in Gender and Environments*

This book explores how climate institutions in industrialised countries work to highlight social differences and integrate this understanding in climate policy making. It investigates policy making in climate institutions from the perspective of power related to gender, and demonstrates how feminist institutionalist theory and intersectionality approaches can contribute to an increased understanding about power relations and social differences in climate policy-making and in climate relevant sectors in industrialised states. It will be of great interest to students and scholars of climate politics, international relations, gender studies and policy studies.

Routledge

Market: climate change/gender studies

June 2021: 6.14 x 9.21: 278pp

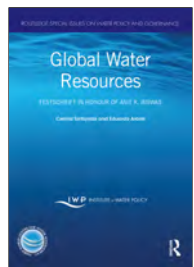
Hb: 978-0-367-51205-7: **£120.00**

eBook: 978-1-003-05282-1

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## Global Water Resources

Festschrift in Honour of Asit K. Biswas



Edited by **Cecilia Tortajada**, National University of Singapore, Singapore and **Eduardo Araral**, National University of Singapore

*Series: Routledge Special Issues on Water Policy and Governance*

*Global Water Resources: Festschrift in Honour of Asit K. Biswas* includes invited contributions on global water issues from 23 globally renowned leaders in the public and private sectors as well as the academia who have made significant contributions to the field of water resources policy, management, development and governance. The vision and expertise of this distinguished group of experts provides a unique focus on unfolding water issues and their bearing on world development.

The chapters in this book were originally published as a special issue of the *International Journal of Water Resources Development*.

Routledge

**Market:** Environment and Sustainability

September 2021: 6.85 x 9.69: 356pp

Hb: 978-1-032-01662-7: **£120.00**

eBook: 978-1-003-17949-8

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## Globalization, Environmental Law and Sustainable Development in the Global South

Challenges for Implementation

Edited by **Kirk W. Junker**, University of Cologne, Germany and **Paolo Davide Farah**

*Series: Routledge Explorations in Environmental Studies*

Comprised of contributions from lawyers from the Global South or who have experience in the Global South, this volume examines the impact of globalization on international environmental law and the implementation of sustainable development in the Global South. It is organised into three parts, with a thematic inquiry woven through every chapter to ask how law can enable economies that can be sustained, given the limited carrying capacity of the earth. This book will be of great interest to students and scholars of environmental law, sustainable development and globalisation and international relations, as well as legal professionals and practitioners.

Routledge

**Market:** Law / Environment / Sustainable Development

November 2021: 6.14 x 9.21: 304pp

Hb: 978-0-367-74913-2: **£120.00**

eBook: 978-1-003-16023-6

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## Green Economy: Opportunities and Challenges

An International Perspective



**Ishwar C. Dhangra**

This book is a conscious effort to discuss the immeasurable environmental damage caused by the human kind and it is by turning these into nature friendly or green as we call them, we can continue to live without any damage to our surroundings. The book has a global approach with an eye on our domestic issues as well.; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Routledge

**Market:** Environment

July 2021: 6.14 x 9.21: 448pp

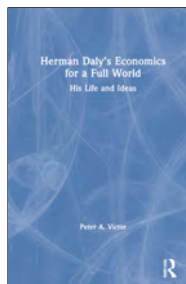
Hb: 978-1-032-07399-6: **£120.00**

eBook: 978-1-003-20672-9

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## Herman Daly's Economics for a Full World

His Life and Ideas



**Peter A. Victor**

As the first biography of Professor Herman Daly, this book provides an in-depth account of one of the leading thinkers and most widely read writers on economics, environment and sustainability. Peter Victor presents a unique insight into Daly's life from childhood to the present day, describing his intellectual development, inspirations and influence. Much of the book is devoted to a comprehensive account of Daly's foundational contributions to ecological economics. This book will be of great interest to students, scholars, researchers, activists, and policy makers concerned with economics, environment, and sustainability.

Routledge

**Market:** Ecological Economics/Environment and Sustainability

September 2021: 6.14 x 9.21: 336pp

Hb: 978-0-367-55694-5: **£120.00**

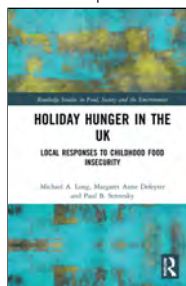
Pb: 978-0-367-55695-2: **£34.99**

eBook: 978-1-003-09474-6

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## Holiday Hunger in the UK

Local Responses to Childhood Food Insecurity



**Michael A. Long, Margaret Anne Defeyter and Paul B. Stretesky**

*Series: Routledge Studies in Food, Society and the Environment*

The book begins by outlining the history and scope of holiday hunger – the condition that occurs when a child's household is, or will become, food insecure during the summer holidays. The decline of the UK welfare state and the rise of neoliberalism has created a situation where up to three million children in the UK face food insecurity during the summer months when there are extra financial pressures on the working poor and when free school meals are not available.

Routledge

**Market:** Food Security / Social Policy / Education

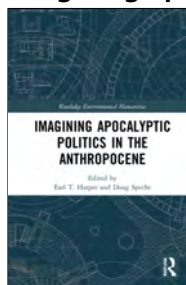
August 2021: 6.14 x 9.21: 160pp

Hb: 978-0-367-46617-6: **£120.00**

eBook: 978-1-003-02997-7

\* For full contents and more information, visit: [www.routledge.com/9780367466176](http://www.routledge.com/9780367466176)

## Imagining Apocalyptic Politics in the Anthropocene



Edited by **Earl T. Harper and Doug Specht**

*Series: Routledge Environmental Humanities*

Bringing together scholars from English literature, geography, politics, the arts, environmental humanities and sociology, *Imagining Apocalyptic Politics in the Anthropocene* contributes to the emerging debate between bodies of thought first incepted by scholars such as Mouffe, Whyte, Kaplan, Hunt, Swyngedouw and Malm about how apocalyptic events, narratives and imaginaries interact with societal and individual agency historically and in the current political moment. Exploring their own empirical and philosophical contexts, the authors examine the forms of political acting found in apocalyptic imaginaries and reflect on what this means for contemporary

society.

Routledge

**Market:** Environmental Humanities/ Climate Change

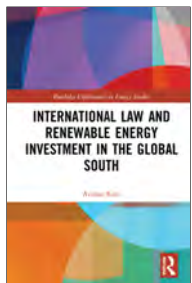
September 2021: 6.14 x 9.21: 272pp

Hb: 978-0-367-65309-5: **£120.00**

eBook: 978-1-003-12885-4

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## International Law and Renewable Energy Investment in the Global South



Avidan Kent, University of East Anglia, UK

Series: *Routledge Explorations in Energy Studies*

This book will discuss the legal tools offered by international law that can support foreign direct investment (FDI) in the renewable energy sector in the Global South. In this volume, Kent explores the various home-country measures (HCMs) offered by international law that support FDI in the renewable energy sector. This book provides a bird's eye evaluation of HCMs from fields such as trade law, investment law, environmental law, development law and more. *International Law and Renewable Energy Investment in the Global South* will be of great interest to scholars, students, and practitioners of international law, energy studies, development studies and IR more broadly.

Routledge

Market: Energy / Environmental Law

September 2021: 6.14 x 9.21: 256pp

Hb: 978-0-367-22858-3: £120.00

eBook: 978-0-429-27720-7

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## Introduction to the Environmental Humanities



J. Andrew Hubbell and John C. Ryan

This book provides an overview of Environmental Humanities' evolution. The text introduces readers to seminal writings, artworks, campaigns, and movements while demystifying important terms such as the Anthropocene, environmental justice, nature, ecosystem, ecology, posthuman and non-human. Emerging theoretical areas such as critical animal and plant studies, gender and queer studies, Indigenous studies, and energy studies are also presented. Organized by discipline, the book explores the role that the arts and humanities plays in the future of the planet.

Routledge

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September 2021: 6.85 x 9.69: 288pp

Hb: 978-0-815-39192-0: £120.00

Pb: 978-0-815-39193-7: £32.99

eBook: 978-1-351-20035-6

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## Is CITES Protecting Wildlife?

Assessing Implementation and Compliance



Tanya Wyatt

Series: *Routledge Studies in Conservation and the Environment*

Humans are causing a biodiversity crisis, where one million species are facing extinction. Species are dying, in no small part, because they are overexploited, poached and trafficked and CITES is the main international instrument designed to protect traded wildlife. Does the state of the world's species mean CITES is failing? This book explores the implementation of and compliance with CITES by all one hundred and eighty-three member countries examining both implementation and compliance. This timely book will be essential reading for students and academics interested in wildlife law, trade and trafficking, green criminology and biodiversity conservation

more broadly.

Routledge

Market: Wildlife Law / Conservation / Green Criminology

June 2021: 6.14 x 9.21: 192pp

Hb: 978-0-367-44071-8: £120.00

Pb: 978-0-367-44128-9: £34.99

eBook: 978-1-003-00783-8

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## Landscape Citizenship



Edited by Tim Waterman, The Bartlett School of Architecture, University College London, UK, Jane Wolff and Ed Wall

This book, featuring work by academics from North America, Europe, and the Middle East, extends the growing body of thought and research in landscape democracy and landscape justice. Grounded in the discourses of ecological, environmental, watershed, and bioregional citizenships, this edited collection evaluates belonging through the idea of landscape as *landship* which describes substantive, mutually constitutive relations between people and place. With a strong international focus across fourteen chapters, it delves into key topics such as marginalization, indigeneity, globalization, politics, and the environment, before finishing with an epilogue written by

Kenneth R. Olwig.

Routledge

Market: Landscape Theory

June 2021: 6.14 x 9.21: 320pp

Hb: 978-0-367-47883-4: £120.00

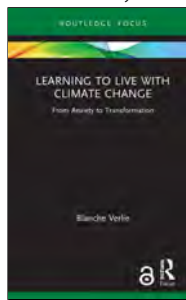
Pb: 978-0-367-47882-7: £34.99

eBook: 978-1-003-03716-3

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## Learning to Live with Climate Change

From Anxiety to Transformation



Blanche Verlie

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This book explores the ways that our emotions entangle us with climate change and offers strategies for engaging with climate anxiety that can contribute to social transformation. Blanche Verlie argues that people in high-carbon societies need to learn to 'live-with' climate change: that human lives are interconnected with the climate, and to cultivate the emotional capacities needed to respond to the climate crisis. This timely work will be valued by those researching, studying and working in diverse fields such as sustainability education, climate communication, human geography, cultural studies, environmental sociology and eco-psychology, as well as the broader public.

Routledge

Market: Environment / Climate Change

June 2021: 5.5 x 8.5: 140pp

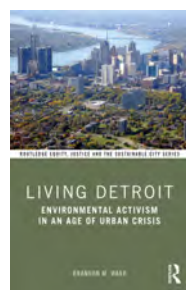
Hb: 978-0-367-44125-8: £44.99

eBook: 978-0-367-44126-5

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## Living Detroit

Environmental Activism in an Age of Urban Crisis



Brandon M. Ward

Series: *Routledge Equity, Justice and the Sustainable City series*

This book argues that environmentalism in postwar Detroit responded to anxieties over the urban crisis, deindustrialization, and the fate of the city. Tying the diverse stories of environmental activism and politics together is the shared assumption environmental activism could improve their quality of life. This book juxtaposes two vibrant and growing fields of American history which often talk past each other, environmentalism and the urban crisis. By putting the two subjects into conversation, we gain a richer understanding of the development of environmental activism and politics after World War II and its relationship to the crisis of America's cities.

Routledge

Market: History / Environment

November 2021: 6.14 x 9.21: 200pp

Hb: 978-0-367-33443-7: £120.00

Pb: 978-0-367-33442-0: £34.99

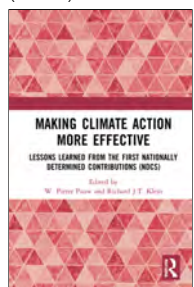
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## Making Climate Action More Effective

Lessons Learned from the First Nationally Determined Contributions (NDCs)



Edited by **W. Pieter Pauw** and **Richard J.T. Klein**

Based on a detailed analysis of the first round of NDCs by some of the world's most knowledgeable climate policy experts, this book offers critical insights relevant to mitigation, adaptation and means of implementation. The book also discusses key elements of the Paris Agreement and broader climate policy, including the Enhanced Transparency Framework and the Paris Committee on Capacity Building, as well as considerations of equity and development.

The chapters in this book were originally published as a special issue of the *Climate Policy*

Routledge

Market: Environment and Sustainability

July 2021: 7 x 10: 136pp

Hb: 978-0-367-75408-2: **£120.00**

eBook: 978-1-003-16240-7

\* For full contents and more information, visit: [www.routledge.com/9780367754082](http://www.routledge.com/9780367754082)

## Orphan Crops for Sustainable Food and Nutrition Security

Promoting Neglected and Underutilized Species



Edited by **Stefano Padulosi**, **E.D. Israel Oliver King**, **Danny Hunter** and **M.S. Swaminathan**

Series: *Issues in Agricultural Biodiversity*



*Orphan Crops for Sustainable Food and Nutrition Security* discusses the issues, challenges, needs and opportunities related to the promotion of orphan crops, known also as neglected and underutilized species (NUS). The book is structured into six parts, covering the following themes: introduction to NUS, approaches, methods and tools for the use enhancement of NUS, integrated conservation and use of minor millets, nutritional and food security roles of minor millets, stakeholders and global champions, and, building an enabling environment.

Routledge

Market: Food / Agriculture / Development

September 2021: 6.14 x 9.21: 424pp

Hb: 978-0-367-49158-1: **£120.00**

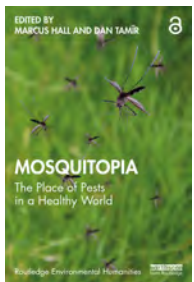
Pb: 978-0-367-90282-7: **£34.99**

eBook: 978-1-003-04480-2

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## Mosquitopia

The Place of Pests in a Healthy World



Edited by **Marcus Hall** and **Dan Tamir**

Series: *Routledge Environmental Humanities*

This edited volume brings together natural scientists, social scientists and humanists to assess if (or how) we may begin to coexist harmoniously with the mosquito. Chapters assess polarizing arguments for conserving and preserving mosquitoes, as well as for controlling and killing them, elaborating on possible consequences of both strategies. This book provides informed answers to the dual question: could we eliminate mosquitoes, and should we? Offering insights spanning the technical to the philosophical, this is the 'go to' book for exploring humanity's many relationships with the mosquito—which becomes a journey to finding better ways to inhabit the natural world.

Routledge

Market: Environment / Health

September 2021: 6.14 x 9.21: 312pp

Hb: 978-0-367-52011-3: **£120.00**

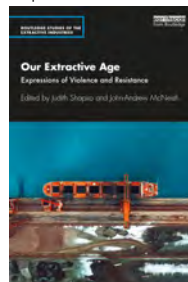
Pb: 978-0-367-52005-2: **£34.99**

eBook: 978-1-003-05603-4

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## Our Extractive Age

Expressions of Violence and Resistance



Edited by **Judith Shapiro** and **John-Andrew McNeish**

Series: *Routledge Studies of the Extractive Industries and Sustainable Development*

Chronicling the increasing rates of brutal suppression of local environmental and labor activists in rural and urban sites of extraction, this volume also foregrounds related violence in areas we might not expect, such as infrastructural developments, protected areas for nature conservation, and even geoengineering in the name of carbon mitigation. The book is essential reading for activists and for students and scholars of environmental politics, natural resource management, political ecology, sustainable development, and globalization.

Routledge

Market: Natural Resources / Environmental Politics / Anthropocene

May 2021: 6.14 x 9.21: 280pp

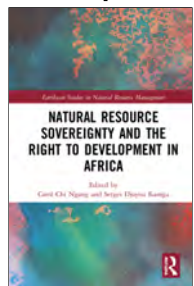
Hb: 978-0-367-65053-7: **£120.00**

Pb: 978-0-367-65052-0: **£34.99**

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## Natural Resource Sovereignty and the Right to Development in Africa



Edited by **Carol Chi Ngang** and **Serges Djyouyou Kamga**,  
University of South Africa

Series: *Earthscan Studies in Natural Resource Management*

This book articulates the central argument that to achieve the right to development in Africa requires appropriate governance of the continent's natural resources to which the people of Africa are guaranteed sovereign ownership. With case study illustrations from Zimbabwe, Ghana, Ethiopia and the Democratic Republic of Congo, chapters explore the normative measures, specific guarantees and community entitlements to natural resources for the realization of the right to development.

Routledge

Market: Natural Resources / Development / African Studies

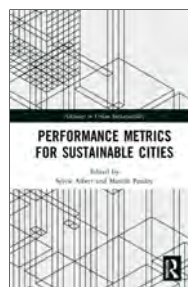
August 2021: 6.14 x 9.21: 328pp

Hb: 978-1-032-04906-9: **£120.00**

eBook: 978-1-003-19511-5

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## Performance Metrics for Sustainable Cities



Edited by **Sylvie Albert** and **Manish Pandey**

Series: *Advances in Urban Sustainability*

This book provides an overview of measurement systems and tools to enable communities to self-assess and benchmark their progress along a continuum of smart, intelligent, and sustainable development. It explains the importance of measurement and evaluation for cities and smaller communities, as well as future factors that will need to be considered and embedded into planning processes. The book describes existing evaluation mechanisms that are being used for government funding decisions, awards of recognition, and new measurement systems to assess what makes a city smarter and more sustainable.

Routledge

Market: Urban Studies / Sustainability

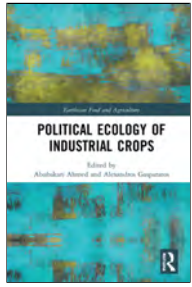
September 2021: 6.14 x 9.21: 256pp

Hb: 978-0-367-56132-1: **£120.00**

eBook: 978-1-003-09656-6

\* For full contents and more information, visit: [www.routledge.com/9780367561321](http://www.routledge.com/9780367561321)

## Political Ecology of Industrial Crops



Edited by **Abubakari Ahmed**, University for Development Studies at Wa Campus, Ghana and **Alexandros Gasparatos**, University of Tokyo, Japan

Series: *Earthscan Food and Agriculture*

Using the conceptual tools and perspectives of political ecology, namely multi-scalar analysis, and attention to marginalization, social difference, and discourses and narratives, this volume provides a critical and comprehensive assessment of the transformative power of industrial cropping systems. Providing a comprehensive and interdisciplinary outlook, this volume will be of great interest to students and scholars of political ecology, agrarian studies, development studies, and ecological economics.

Routledge

Market: Agriculture / Political Ecology

September 2021: 6.14 x 9.21: 312pp

Hb: 978-0-367-35670-5: **£120.00**

eBook: 978-0-429-35110-5

\* For full contents and more information, visit: [www.routledge.com/9780367356705](http://www.routledge.com/9780367356705)

## Post-Growth Work

Employment and Meaningful Activities within Planetary Boundaries



Edited by **Irmi Seidl** and **Angelika Zahrt**

This book argues that society must rethink the notion of formal employment and instead introduce and spread the notion of 'meaningful work' so that societies can become independent of economic growth. The authors introduce the notion of meaningful activities that embrace various kinds of work, which are meaningful for the worker as well as society as a whole. They also describe the necessary transformations in companies and for consumers, for social and tax systems, social services and agriculture. This book will be a key resource for professionals and scholars interested in sustainability, economics, work, transformation and post-growth studies.

Routledge

Market: Ecological Economics/ Degrowth/ Sustainable Development

September 2021: 5.5 x 8.5: 224pp

Hb: 978-1-032-03458-4: **£120.00**

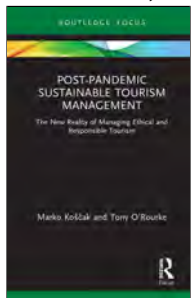
Pb: 978-1-032-03457-7: **£24.99**

eBook: 978-1-003-18737-0

\* For full contents and more information, visit: [www.routledge.com/9781032034584](http://www.routledge.com/9781032034584)

## Post-Pandemic Sustainable Tourism Management

The New Reality of Managing Ethical and Responsible Tourism



Marko Koščak and Tony O'Rourke

Series: *Routledge Focus on Environment and Sustainability*

Tourism, as with many parts of the economy, is at a pause-reflect-rest stage in the post pandemic world. This book puts forward some positive and practical concepts for the reset stage in terms of pushing towards wholly sustainable tourism. This book evaluates how the pandemic and economic decline affects ethical and responsible tourism. It reflects on the position the authors established in "Ethical & Responsible Tourism - managing sustainability in local tourism destinations" and then determines how ethically and responsibly focused tourism may adapt, develop and maintain safety for consumers in the post-virus world.

Routledge

Market: Sustainable Tourism

June 2021: 5.5 x 8.5: 164pp

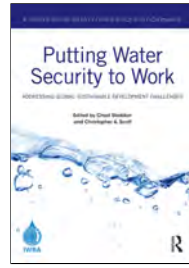
Hb: 978-0-367-71626-4: **£44.99**

eBook: 978-1-003-15310-8

\* For full contents and more information, visit: [www.routledge.com/9780367716264](http://www.routledge.com/9780367716264)

## Putting Water Security to Work

Addressing Global Sustainable Development Challenges



Edited by **Chad Staddon** and **Christopher A. Scott**

Series: *Routledge Special Issues on Water Policy and Governance*

In this collection the authors offer a radical repositioning of water security debates updated to reflect the concerns of our post-pandemic world. The chapters in this volume examine several different themes including how water security articulates with locality and culture, how it operates across spatial scales and its moral/ethical resonances.

The chapters in this book were originally published in the journals *Water International* and *International Journal of Water Resources Development*.

Routledge

Market: Environment and Sustainability

September 2021: 6.85 x 9.69: 182pp

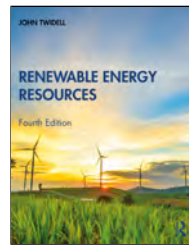
Hb: 978-0-367-65019-3: **£120.00**

eBook: 978-1-003-12744-4

\* For full contents and more information, visit: [www.routledge.com/9780367650193](http://www.routledge.com/9780367650193)

4th Edition

## Renewable Energy Resources



John Twidell, AMSET Centre, UK

This is a numerate and quantitative text. It covers the many renewables technologies implemented worldwide by harnessing sustainable resources, mitigating pollution and climate change, and providing cost effective services. This 4<sup>th</sup> edition is extensively updated by John Twidell with global developments as underpinned by fundamental analysis and illustrated by case studies and worked examples. *Renewable Energy Resources* supports multi-disciplinary master's degrees in science and engineering, and specialist modules at undergraduate level. Practising scientists and engineers will find it a useful

introductory text and reference book.

Routledge

Market: Energy/Environmental Science

September 2021: 7.44 x 9.69: 890pp

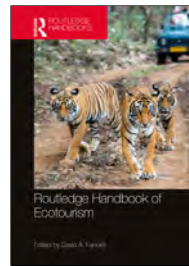
Hb: 978-1-138-32226-4: **£130.00**

Pb: 978-0-415-63358-1: **£48.99**

eBook: 978-0-429-45216-1

\* For full contents and more information, visit: [www.routledge.com/9781138322264](http://www.routledge.com/9781138322264)

## Routledge Handbook of Ecotourism



Edited by **David A. Fennell**

Series: *Routledge International Handbooks*

This handbook presents a timely, broad-ranging and provocative overview of the essential nature of ecotourism. The chapters will both advance the existing central themes of ecotourism and provide challenging and divergent observations that will thrust ecotourism into new areas of research, policy and practice. The volume is arranged around four key themes: sustainability, ethics and identity, change, conflict and consumption, and environment and learning, with a total of 28 chapters. With contributions from authors around the world, this handbook gives a global platform to local voices, in both developed and

emerging country contexts.

Routledge

Market: Tourism / Ecotourism

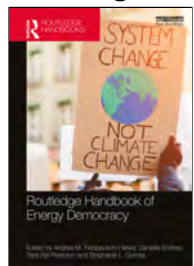
September 2021: 6.85 x 9.69: 416pp

Hb: 978-0-367-43192-1: **£190.00**

eBook: 978-1-003-00176-8

\* For full contents and more information, visit: [www.routledge.com/9780367431921](http://www.routledge.com/9780367431921)

## Routledge Handbook of Energy Democracy



Edited by **Andrea M. Feldpausch-Parker**, State University of New York College of Environmental Science and Forestry, USA, **Danielle Endres**, **Tarla Rai Peterson**, Texas University, USA and **Stephanie L. Gomez**

Series: *Routledge International Handbooks*

This handbook offers a comprehensive transdisciplinary examination of the research and practices that constitute the emerging research agenda in energy democracy. The vision of this volume is explicitly transdisciplinary and global, including contributions from interdisciplinary international scholars and practitioners. It will be the premier source for all students and researchers interested in the field of energy; including policy,

politics, transitions, access, justice, and public participation.

Routledge

Market: Energy Policy / Environmental Politics

November 2021: 6.85 x 9.69: 464pp

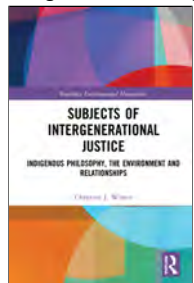
Hb: 978-1-138-39225-0: **£190.00**

eBook: 978-0-429-40230-2

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## Subjects of Intergenerational Justice

Indigenous Philosophy, the Environment and Relationships



Christine J. Winter

Series: *Routledge Environmental Humanities*

This book challenges mainstream Western IEJ (intergenerational environmental justice) in a manner that privileges indigenous philosophies and highlights the value these philosophies have for solving global environmental problems. Divided into three parts, the book begins by examining the framing of Western liberal environmental, intergenerational and indigenous justice theory and reviews decolonial theory. Using contemporary case studies drawn from the courts, film, biography, and protests actions, the second section explores contemporary Māori and Aboriginal experiences of values-conflict in encounters with politics and law.

Routledge

Market: Environmental Philosophy/Indigenous Studies

September 2021: 6.14 x 9.21: 222pp

Hb: 978-0-367-55147-6: **£120.00**

eBook: 978-1-003-09745-7

\* For full contents and more information, visit: [www.routledge.com/9780367551476](http://www.routledge.com/9780367551476)

## Sustainability in High-Excellence Italian Food and Wine



Laura Onofri

Series: *Routledge Focus on Environment and Sustainability*

This book presents contemporary case studies on selected Italian food and wine products, to explore how traditional production and consumption models address and adapt to the sustainability challenges in the Italian high excellence agri-food sector. Recommending that hybrid structures, such as cooperatives and consortia, are the most cost-minimizing governance structures for the production, the book highlights that in the case of Italian excellency food, environmental sustainability and economic efficiency are not actually traded off but are reciprocally valorized through the regulation of high-quality standards.

Routledge

Market: Food & Agriculture / Sustainability

July 2021: 5.5 x 8.5: 110pp

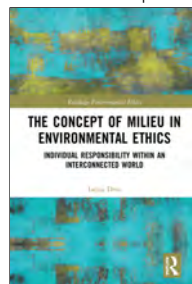
Hb: 978-1-032-00476-1: **£44.99**

eBook: 978-1-003-17432-5

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## The Concept of Milieu in Environmental Ethics

Individual Responsibility within an Interconnected World



Lařna Droz

Series: *Routledge Environmental Ethics*

This book discusses how we can come together to address current environmental problems at the planetary level, such as climate change, biodiversity loss, transborder pollution and desertification. It draws on the concept of milieu (*fūdo*) inspired by the Japanese philosopher, Watsuji Tetsurō, which captures how we act within and perceive our surroundings as a web of culturally, historically and geographically situated meanings and values. It argues that the milieu connects us as individuals with community, past and future history, and the natural world, providing us with common ground for global environmental ethics.

Routledge

Market: Environment / Philosophy

August 2021: 6.14 x 9.21: 208pp

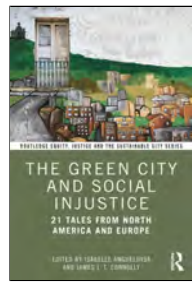
Hb: 978-0-367-77643-5: **£120.00**

eBook: 978-1-003-17220-8

\* For full contents and more information, visit: [www.routledge.com/9780367776435](http://www.routledge.com/9780367776435)

## The Green City and Social Injustice

21 Tales from North America and Europe



Edited by **Isabelle Anguelovski** and **James J. T. Connolly**

Series: *Routledge Equity, Justice and the Sustainable City series*

This book examines the recent urban environmental trajectory of twenty-one cities in Europe and North America over a 20 year period. Based on fieldwork in ten countries, and on analysis of core planning, policy, and activist documents and data, the book offers a critical view of the growing green planning orthodoxy in the Global North. It highlights the entanglements of this tenet with neoliberal municipal policies including budget cuts for community initiatives, long-term green spaces, and housing for the most fragile residents; and the focus on large-scale urban redevelopment and high-end real estate investment.

Routledge

Market: Urban Studies

November 2021: 6.14 x 9.21: 328pp

Hb: 978-1-032-02413-4: **£120.00**

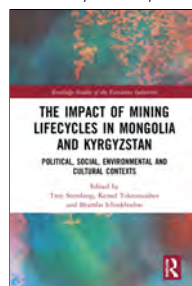
Pb: 978-1-032-02411-0: **£34.99**

eBook: 978-1-003-18327-3

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## The Impact of Mining Lifecycles in Mongolia and Kyrgyzstan

Political, Social, Environmental and Cultural Contexts



Edited by **Troy Sternberg**, **Kemel Toktomushev** and **Byamba Ichinkhorloo**

Series: *Routledge Studies of the Extractive Industries and Sustainable Development*

As ex-Soviet states, Mongolia and Kyrgyzstan share history, culture and transitions to democracy. Most importantly, both are mineral-rich countries on China's frontier and epi-centres of resource extraction. This volume examines challenges communities in these countries encounter on the long journey through resource exploration, extraction and mine closure. The book will be of great interest to students and scholars of mining and natural resource extraction, corporate social responsibility and sustainable development.

Routledge

Market: Extractive Industries / Sustainable Development / Asian Studies

September 2021: 6.14 x 9.21: 280pp

Hb: 978-0-367-56339-4: **£120.00**

eBook: 978-1-003-09734-1

\* For full contents and more information, visit: [www.routledge.com/9780367563394](http://www.routledge.com/9780367563394)

## The Political Ecology of Austerity

Crisis, Social Movements, and the Environment

Edited by Rita Calvário, Maria Kaika and Giorgos Velegrakis

Series: *Routledge Explorations in Environmental Studies*

This book explores the scholarly and political debates surrounding the environmental dimension of austerity policies that has thus far escaped academic, policy and media attention. The book highlights the importance of considering environmental issues when analysing austerity and in designing alternative responses to economic crisis in the future. Mobilising case studies from across the world, the book documents the ways in which austerity impacts global and local ecologies and peoples, and shapes and gives rise to environmental conflicts and new forms and practices of social mobilization and resistance.

Routledge

Market: Environment / Economics

November 2021: 6.14 x 9.21: 248pp

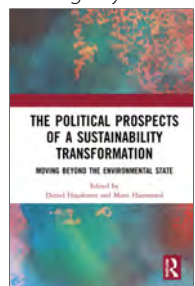
Hb: 978-0-367-47735-6: **£120.00**

eBook: 978-1-003-03626-5

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## The Political Prospects of a Sustainability Transformation

Moving Beyond the Environmental State



Edited by Daniel Hausknost, Alpen Adria University, Austria, and Marit Hammond

With planetary ecological challenges like climate change spiraling out of control and dwarfing the environmental state's classical tasks of environmental management, new questions about the transformative capacities of the state are becoming acute today. This book explores these and other questions from a variety of theoretical and empirical angles, covering the fields of democratic theory, theories of the state, political economy, political sociology, rhetoric and political philosophy.

The chapters in this book were originally published as a special issue of the journal *Environmental Politics*.

Routledge

Market: Environment and Sustainability

June 2021: 6.85 x 9.69: 208pp

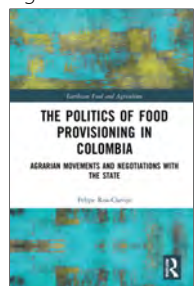
Hb: 978-0-367-67671-1: **£120.00**

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## The Politics of Food Provisioning in Colombia

Agrarian Movements and Negotiations with the State



Felipe Roa-Clavijo

Series: *Earthscan Food and Agriculture*

Most of the research in the field of agrarian studies in Colombia has focused on inequalities in land distribution, the impacts of violent conflict, and most recently, the first phase of the peace agreement implementation. This book links and complements these literatures by critically engaging with an original framework that uncovers the conflicts and politics of food provisioning: who produces what and where, and with what socio-economic effects. This analytical lens is used to explain the re-emergence of national agrarian movements, their contestation of the dominant development narratives and their engagement in discussions about food sovereignty with the state.

Routledge

Market: Food & Agriculture / Rural Studies / Latin American Studies

October 2021: 6.14 x 9.21: 216pp

Hb: 978-0-367-64977-7: **£120.00**

eBook: 978-1-003-12726-0

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## The Politics of the Sustainable Development Goals

Legitimacy, Responsibility, and Accountability



Magdalena Bexell, Lund University, Sweden and Kristina Jönsson

Series: *Routledge Studies in Sustainable Development*

This book draws attention to political aspects of sustainable development goal-setting, exploring the Sustainable Development Goals at the global-national nexus during their first five years. This book explores three concepts to call attention to political qualities of processes related to the SDGs: legitimacy, responsibility, and accountability. Legitimacy is required to obtain broad political ownership for policy goals in order for them to become effective in addressing cross-border sustainability challenges. Responsibility needs to be clearly distributed among political institutions if a long-term set of broad goals such as the

SDGs are to be realised.

Routledge

Market: Environment / Sustainability

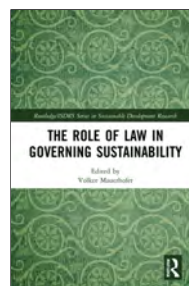
June 2021: 6.14 x 9.21: 184pp

Hb: 978-0-367-48948-9: **£120.00**

eBook: 978-1-003-04361-4

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## The Role of Law in Governing Sustainability



Edited by Volker Mauerhofer

Series: *Routledge/ISDRS Series in Sustainable Development Research*

This book explores how public and private actors can interrelate to achieve also by means of law a sustainable development which is beneficial for the environment, society and the economy. It assesses the structure, functions and perspectives of law in the wider governance frameworks of sustainable development. The book also provides latest and in-depth insights from each of the three dimensions of sustainable development and the relations among them. Latest political developments on global and regional level related to the environmental, social and the economic dimensions are provided as well as in-depth

case studies.

Routledge

Market: Environment / Sustainable Development

May 2021: 6.14 x 9.21: 296pp

Hb: 978-0-367-74632-2: **£120.00**

eBook: 978-1-003-15883-7

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## The Routledge Handbook of Research Methods for Social-Ecological Systems



Edited by Reinette Biggs, Alta de Vos, Rika Preiser, Hayley Clements, Kristine Maciejewski and Maja Schlüter

Series: *Routledge International Handbooks*

This handbook provides a synthetic guide to the range of methods that can be employed in social-ecological systems (SES) research. Each chapter discusses the types of SES questions to which the particular methods are suited and the potential resources and skills required for their implementation. The book contains a conceptual and practical introduction to SES research, a discussion of key gaps and frontiers in SES research methods, and a glossary of key terms in SES research. Contributions from 97 different authors from around the world, bring a wealth of expertise and experience to this book.

Routledge

Market: Environmental Studies / Research Methods

July 2021: 6.85 x 9.69: 526pp

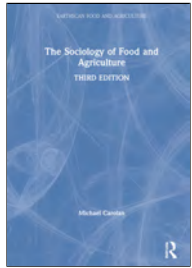
Hb: 978-0-367-89840-3: **£190.00**

eBook: 978-1-003-02133-9

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3rd Edition

## The Sociology of Food and Agriculture



Michael Carolan, Colorado State University, USA

Series: *Earthscan Food and Agriculture*

Thoroughly revised and updated, the third edition of *The Sociology of Food and Agriculture* provides a cutting-edge, comprehensive introduction to the study of food and society. This title is perfect for students of food studies, including food justice, food and nutrition security, sustainable diets and food sovereignty, environmental sociology, agriculture and cultural studies.

Routledge

Market: Sociology / Food and Agriculture

September 2021: 6.85 x 9.69: 276pp

Hb: 978-0-367-68002-2: **£120.00**

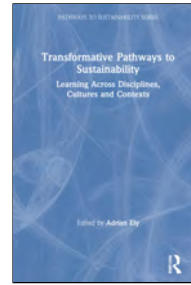
Pb: 978-0-367-68001-5: **£32.99**

eBook: 978-1-003-13378-0

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## Transformative Pathways to Sustainability

Learning Across Disciplines, Cultures and Contexts



Edited by Adrian Ely

Series: *Pathways to Sustainability*

The book draws on content and cases from across the 'Pathways' consortium; an international group of six regional hubs that defines sustainability challenges in their own local or national contexts, in the following research areas: agri-food systems, with a focus on open-source seeds in Argentina and sustainable land management in the UK; low-carbon energy transitions that serve the needs of the poor, focusing on mobile-enabled solar home systems in Kenya and social aspects of the green transformation in China; and sustainable urban water and waste, looking at Xochimilco wetland in Mexico and Gurgaon in India.

Routledge

Market: Environment / Sustainability

September 2021: 6.14 x 9.21: 248pp

Hb: 978-0-367-35522-7: **£120.00**

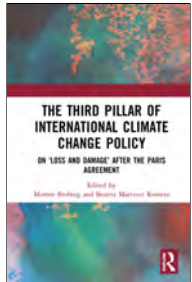
Pb: 978-0-367-35523-4: **£29.99**

eBook: 978-0-429-33193-0

\* For full contents and more information, visit: [www.routledge.com/9780367355227](http://www.routledge.com/9780367355227)

## The Third Pillar of International Climate Change Policy

On 'Loss and Damage' after the Paris Agreement



Edited by Morten Broberg and Beatriz Martinez Romera

This book explores the present and future of loss and damage in the era of the Paris Agreement. It provides an up-to-date analysis of 'loss and damage' which is often described as the third pillar of international climate change policy. It is based around four main themes: (i) insurance schemes, (ii) key gaps in loss and damage governance, including non-economic loss and damage and slow-onset events, (iii) legal aspects of loss and damage, and (iv) novel approaches to loss and damage.

The chapters in this book were originally published as a special issue of *Climate Policy*.

Routledge

Market: Environmental Studies

June 2021: 6.85 x 9.69: 134pp

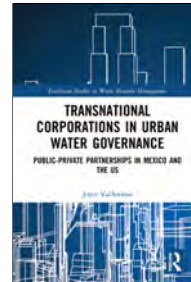
Hb: 978-0-367-67668-1: **£120.00**

eBook: 978-1-003-13227-1

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## Transnational Corporations in Urban Water Governance

Public-Private Partnerships in Mexico and the US



Joyce Valdovinos

Series: *Earthscan Studies in Water Resource Management*

This book examines the role played by business in urban water governance by analyzing the evolution of the global private water sector along with four public-private partnerships in Mexico and the U.S. The local nature of water services often hides the global developments behind the rise of transnational water corporations, which have gone from local operators to dynamic and powerful actors within an interconnected transnational space for water.

Routledge

Market: Water Governance / Business

August 2021: 6.14 x 9.21: 278pp

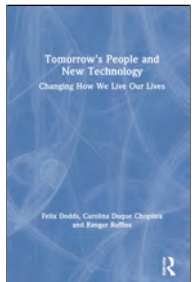
Hb: 978-0-367-44059-6: **£120.00**

eBook: 978-1-003-00732-6

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## Tomorrow's People and New Technology

Changing How We Live Our Lives



Felix Dodds, University of North Carolina & Tellus Institute, USA, Carolina Duque Chopitea and Ranger Ruffins

The Fourth Industrial Revolution is characterized by the emergence of new technologies that are blurring the boundaries between the physical, the digital, and the biological worlds. This book allows readers to explore how these technologies will impact peoples' lives by 2030. Providing an indication of what the world might look like in 2030, this book is essential reading for students, scholars, professionals, and policymakers interested in the nexus between emerging technologies and sustainable development, politics and society, and global governance.

Routledge

Market: Sustainable Development / Governance / Technology

October 2021: 6.14 x 9.21: 216pp

Hb: 978-0-367-49290-8: **£120.00**

Pb: 978-0-367-49288-5: **£34.99**

eBook: 978-1-003-04549-6

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## True Cost Accounting for Food

Balancing the Scale



Edited by Barbara Gemmill-Herren, Lauren E. Baker and Paula A. Daniels

Series: *Routledge Studies in Food, Society and the Environment*

This book explains how True Cost Accounting is an effective tool we can use to address the pervasive imbalance in our food system. This volume is essential reading for professionals and policymakers involved in developing and reforming the food system, as well as students and scholars working on food policy, food systems and sustainability.

Routledge

Market: Agriculture / Food / Development

June 2021: 6.14 x 9.21: 316pp

Hb: 978-0-367-50689-6: **£120.00**

Pb: 978-0-367-50685-8: **£29.99**

eBook: 978-1-003-05080-3

\* For full contents and more information, visit: [www.routledge.com/9780367506896](http://www.routledge.com/9780367506896)

## Understanding Just Sustainabilities from Within

A Case Study of a Shared-Use Commercial Kitchen in Connecticut



Phoebe Godfrey, University of Connecticut, USA

Series: *Routledge Equity, Justice and the Sustainable City series*

Written by the co-founder and former board president of a non-profit shared-use commercial kitchen, this book presents an intersectional analysis of CLiCK (Commercially Licensed Co-operative Kitchen), in order to explore what just sustainabilities can look and feel like from *within* and *without*. Through a unique combination of auto ethnography, participant observation, surveys and secondary research, this book offers insights into CLiCK's micro and macro successes, failures, and unknowns in relation to its attempt to put the concept of just sustainabilities into daily practice, and praxis.

Routledge

Market: Environment / Sustainability

June 2021: 6.14 x 9.21: 190pp

Hb: 978-1-138-61501-4: £120.00

eBook: 978-0-429-46344-0

\* For full contents and more information, visit: [www.routledge.com/9781138615014](http://www.routledge.com/9781138615014)

## Urban Blue Spaces

Planning and Design for Water, Health and Well-Being



Edited by **Simon Bell**, Estonian University of Life Sciences, Estonia, **Friedrich Kuhlmann**, Estonian University of Life Sciences, Estonia, **Mathew P. White**, University of Exeter, UK, **Mark J. Nieuwenhuijsen**, IS Global, UK, **James Grellier**, University of Exeter, UK and **Lora E. Fleming**, University of Exeter, UK

This book presents an evidence-based approach to landscape planning and design for urban blue spaces that maximises the benefits to human health and well-being while minimising the risks. The international editorial team, consisting of researchers and professionals across several disciplines, leads the reader

through theoretical aspects, evidence, illustrated case studies, risk assessment and a series of validated tools to aid planning and design, before finishing with overarching planning and design principles for a range of blue-space types. Over 200 full colour illustrations accompany the case study examples from geographic locations all over Europe.

Routledge

Market: Environmental Planning / Design

August 2021: 8.25 x 11: 558pp

Hb: 978-0-367-17317-3: £120.00

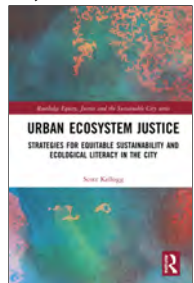
Pb: 978-0-367-17318-0: £39.99

eBook: 978-0-429-05616-1

\* For full contents and more information, visit: [www.routledge.com/9780367173173](http://www.routledge.com/9780367173173)

## Urban Ecosystem Justice

Strategies for Equitable Sustainability and Ecological Literacy in the City



Scott Kellogg

Series: *Routledge Equity, Justice and the Sustainable City series*

Merging together the fields of urban ecology, environmental justice, and urban environmental education, this book promotes building fair, accessible, and mutually beneficial relationships between citizens and the soils, water, atmospheres, and biodiversity in their cities. The book provides a framework for re-centering issues of justice and fairness in sustainability discourse while challenging the profound ecological alienation experienced by urban residents. Through a citizen-centered lens, the book offers a guide to reconciling these issues by demonstrating how questions of equity, access, and justice apply to the biophysical dimensions of the urban ecosystem.

Routledge

Market: Environment / Justice

September 2021: 6.14 x 9.21: 264pp

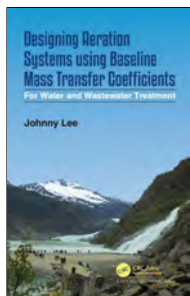
Hb: 978-0-367-85870-4: £120.00

eBook: 978-0-367-85871-1

\* For full contents and more information, visit: [www.routledge.com/9780367858704](http://www.routledge.com/9780367858704)

## Designing Aeration Systems using Baseline Mass Transfer Coefficients

For Water and Wastewater Treatment



Johnny Lee

The book is about the discovery of a Standard Specific Baseline Mass Transfer Coefficient ( $K_{L,0,20}$ ) that represents a revolutionary change in the understanding, designing, operation of aeration equipment, as well as providing a baseline for future research and development for water and wastewater treatment systems. It discusses the use of the Standard Model for oxygen transfer to determine the baseline, and its major finding is to show that the gas transfer model is a consistent relativistic theory of molecular interactions.

CRC Press

Market: Environmental Engineering

July 2021: 6.14 x 9.21: 228pp

Hb: 978-0-367-61761-5: £120.00

eBook: 978-1-003-10646-3

\* For full contents and more information, visit: [www.routledge.com/9780367617615](http://www.routledge.com/9780367617615)

## Environment and Innovation

Strategies to Promote Growth and Sustainability



Edited by Clara Inés Pardo Martínez and Alexander Cotte Poveda

This book seeks to show the role of sustainability and innovation in the business and productive sector as good strategy to improve performance and contribute to growth and sustainable development through innovative strategies applied to the management process. Different public and private organizations seek to maintain their business and market share, while developing strategies to improve environmental performance through innovation and address new challenges that seek a productive sector responsible on environmental issues.

CRC Press

Market: Environmental Sciences

September 2021: 6.14 x 9.21: 228pp

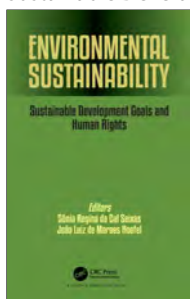
Hb: 978-0-367-68275-0: £125.00

eBook: 978-1-003-13671-2

\* For full contents and more information, visit: [www.routledge.com/9780367682750](http://www.routledge.com/9780367682750)

## Environmental Sustainability

Sustainable Development Goals and Human Rights



Edited by Sônia Regina da Cal Seixas, Universidade Estadual de Campinas, Sao Paulo, Brazil and João Luiz de Moraes Hoefel

United Nations 2030 Agenda for Sustainable Development 17 Goals blends the three dimensions of sustainable development: economic, social and environmental. They function as commitments to be met by governments, civil society and the private sector for a 2030 collaborative project. The five keywords to achieve it are: *People, Planet, Prosperity, Peace, and Partnerships*. Another reading is to link these precepts with the Universal Declaration of Human Rights because to obtain real development we need full realization of human rights.

CRC Press

Market: Environmental Sustainability

September 2021: 6.14 x 9.21: 320pp

Hb: 978-0-367-86169-8: £155.00

eBook: 978-1-003-02016-5

\* For full contents and more information, visit: [www.routledge.com/9780367861698](http://www.routledge.com/9780367861698)

## Green and Social Economy Finance

A Review



Edited by Karen Wendt

"How will the investment and finance community, which of all industries has excelled most at profit maximization, transform itself to become a driving force to create positive impact through green and social economy finance supporting the achievement of the UN Sustainable Development Goals and the Paris Agreement?" This anthology, with contributions from well known economists and sociologists, provides insight in obtaining finance for green and social solutions and addresses the conceptualization of social and environmental finance. It identifies new products and approaches in business and investment, which aligns finance and investment with the Paris Agreement.

CRC Press

Market: Environmental Economics

July 2021: 6.14 x 9.21: 336pp

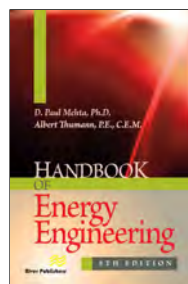
Hb: 978-0-367-34439-9: £150.00

eBook: 978-0-429-32932-6

\* For full contents and more information, visit: [www.routledge.com/9780367344399](http://www.routledge.com/9780367344399)

8th Edition

## Handbook of Energy Engineering



D. Paul Mehta and Albert Thumann

Series: *Energy Engineering and Systems*

The *Handbook of Energy Engineering* covers the latest updates to codes and standards in the energy industry. The Eighth Edition features two new chapters on thermal storage, and Occupants' Behavior and Energy Consumption in Buildings. Also included are chapters on energy auditing, waste heat recovery, utility system optimization, control systems, compressed air system optimization, and more. The book can act as a reference to guide you step-by-step in applying the principles of energy engineering and management to the design of electrical, HVAC, utility, process and building systems for both new design and retrofit projects.

River Publishers

Market: Energy Engineering

September 2021: 6 x 9: 484pp

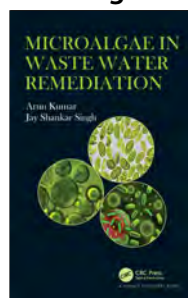
Hb: 978-8-770-22345-4: £120.00

eBook: 978-1-003-19835-2

Prev. Ed Hb: 978-1-466-56161-8

\* For full contents and more information, visit: [www.routledge.com/9788770223454](http://www.routledge.com/9788770223454)

## Microalgae in Waste Water Remediation



Arun Kumar, BB Ambedkar (Central) University, Lucknow Vidya Vihar, Raebarelli Road Lucknow, Uttar Pradesh 226025 India and Jay Shankar Singh, Dept. of Environ. Microbiology, Babasaheb Bhimrao Ambedkar Uni. RBL Road Lucknow, Uttar Pradesh 226025 India

Microalgae in Waste Water Remediation aims to point out trends and current topics concerning the use of microalgae in wastewater treatment and to identify potential paths for future research regarding microalgae-based bioremediation. To achieve this goal, the book also assessing and analyzes the topics that attract attention among the scientific community and their evolution through time. This book will be useful to the students, scientists and policy makers concerned with the microalgae mediated management of water-water effluents and its applications in overall future sustainable development.

CRC Press

Market: Life Science

July 2021: 6.14 x 9.21: 252pp

Hb: 978-0-367-27603-4: £150.00

eBook: 978-0-429-29808-0

\* For full contents and more information, visit: [www.routledge.com/9780367276034](http://www.routledge.com/9780367276034)

## Microbial Surfactants

Volume I: Production and Applications



Edited by **R. Z. Sayyed**, PSGVP Mandal's Arts, India, **Hesham Ali Metwally El Enshasy**, Institute of Bioproduct Development, Universiti Teknologi Malaysia, Malaysia and **Bee Hameeda**, Department of Microbiology, Osmania University, India

*Series: Industrial Biotechnology*

The aim of this book is to highlight key aspects from basics to advanced concepts, classifications, production and applications in various fields such as agriculture, health, bioremediation, industries, pharmaceutical, oil recovery, environment, nanotechnology. It also serves as an excellent and expensive literature on fermentation, recovery, genomics and

metagenomics of biosurfactant production. The book focuses on the biosurfactant production from bacteria, the diversity of biosurfactant producing bacteria, and industrial need of biosurfactant.

CRC Press

**Market:** Molecular Biology

December 2021: 6.14 x 9.21: 300pp

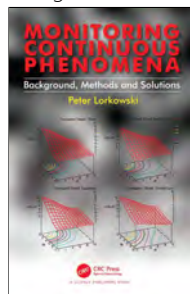
Hb: 978-0-367-52118-9: **£110.00**

eBook: 978-1-003-05663-8

\* For full contents and more information, visit: [www.routledge.com/9780367521189](http://www.routledge.com/9780367521189)

## Monitoring Continuous Phenomena

Background, Methods and Solutions



**Peter Lorkowski**

The monitoring of continuous phenomena like temperature, soil moisture or air pollutants is becoming more common due to the availability of cheaper and better sensor infrastructure. Better methods for processing, storing and provisioning the data produced by such observations are still evolving. The fundamental features among them are interpolation, real-time provisioning, critical states definitions (e.g. exceeded threshold of the daily mean) and field data type management. The book gives an overview of monitoring and proposes several solutions for problems that occur in this context.

CRC Press

**Market:** Environmental Science

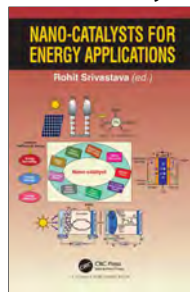
June 2021: 6.14 x 9.21: 216pp

Hb: 978-1-138-33973-6: **£155.00**

eBook: 978-0-429-44096-0

\* For full contents and more information, visit: [www.routledge.com/9781138339736](http://www.routledge.com/9781138339736)

## Nano-catalysts for Energy Applications



Edited by **Rohit Srivastava**, Pandit Deendayal Petroleum University, India

This book comprises of chapters based on design of various advanced nano-catalysts and offers a development of novel solutions for a better sustainable energy future. The book includes all aspects of physical chemistry, chemical engineering and material science. The advances in nanoscience and nanotechnology help to find cost-effective and environmentally sound methods of converting naturally inspired resources into fuels, chemicals and energy. The book leads the scientific community to the most significant development in the focus research area. It provides a broad and in-depth coverage of design and development advanced nano-catalyst for various

energy applications.

CRC Press

**Market:** Nanoscience

July 2021: 6.14 x 9.21: 210pp

Hb: 978-0-367-53643-5: **£95.00**

eBook: 978-1-003-08272-9

\* For full contents and more information, visit: [www.routledge.com/9780367536435](http://www.routledge.com/9780367536435)

## Water Economics in the Anthropocene

**Atif Kubursi**, McMaster University and **Velma I. Grover**, York University, Toronto, Canada

Water is often treated as a consumer good or a producer good; rarely is it seen as a scarce asset or natural capital. Significant differences emerge when water is treated as a reproducible commodity versus a nonrenewable asset, and this book will integrate both. Physical scarcity is compounded by economic scarcity when water is under- or mispriced; the authors construct real and shadow prices to reflect physical scarcity and environmental opportunity costs, and supply expansion is squared against demand management. Water cannot be treated in isolation of the energy or food systems, and this book develops a theoretical model to deal with the complex interrelationships among the three systems.

CRC Press

**Market:** Water Science & Engineering

October 2021: 6.14 x 9.21: 225pp

Hb: 978-1-498-76877-1: **£121.00**

eBook: 978-1-315-15410-7

\* For full contents and more information, visit: [www.routledge.com/9781498768771](http://www.routledge.com/9781498768771)



## Active Packaging for Various Food Applications

Edited by **M. Selvamuthukumar**, Institute of Technology, Haramaya University  
*Active Packaging for Various Food Applications* addresses the significance of active packaging for enhancing quality and safety of various packaged foods. This book discusses extending the shelf life of various food products by incorporating various active packaging systems. It also addresses bioactive materials used for packing food products, and application of nano materials in an active packaging system. This book is a great source for academicians, scientists, research scholars, and food industry personnel, shedding light on the recent techniques used in active packaging systems for enhancing quality aspects.

CRC Press

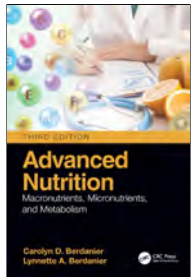
**Market:** Food Science & Technology  
September 2021: 7 x 10: 224pp  
Hb: 978-0-367-61922-0: **£155.00**  
eBook: 978-1-003-12778-9

\* For full contents and more information, visit: [www.routledge.com/9780367619220](http://www.routledge.com/9780367619220)

3rd Edition

## Advanced Nutrition

Macronutrients, Micronutrients, and Metabolism



**Carolyn D. Berdanier**, Professor Emerita, University of Georgia, Athens, USA and **Lynnette A. Berdanier**, University of North Georgia, Gainesville, USA

Like its predecessors, the new and updated edition of *Advanced Nutrition: Macronutrients, Micronutrients, and Metabolism* is an essential textbook for advanced undergraduate and first-year graduate students studying human nutrition. This book draws on inter-related sciences including biochemistry, genetics, and physiology to provide a full understanding of nutrition science. This third edition describes the chemistry, absorption, use and excretion of each of the essential nutrients. There is comprehensive coverage of nutrient-nutrient interactions and both macro and micronutrients.

CRC Press

**Market:** Nutrition  
July 2021: 7 x 10: 614pp  
Hb: 978-0-367-55460-6: **£170.00**  
Pb: 978-0-367-55458-3: **£68.99**  
eBook: 978-1-003-09366-4

\* For full contents and more information, visit: [www.routledge.com/9780367554606](http://www.routledge.com/9780367554606)

2nd Edition

## Amino Acids

Biochemistry and Nutrition

**Guoyao Wu**, Texas A&M University, College Station, USA

The second edition of *Amino Acids: Biochemistry and Nutrition* presents exhaustive coverage of amino acids in the nutrition, metabolism and health of humans and other animals. Substantially revised and expanded, this book introduces the basic principles of amino acid biochemistry and nutrition. The book begins with the basic chemical concepts of amino acids, peptides and proteins, and their digestion and absorption. Subsequent chapters cover cell-, tissue-, and species-specific synthesis and catabolism of amino acids. This book is an authoritative reference for students and researchers in both biomedicine and agriculture.

CRC Press

**Market:** Nutrition  
September 2021: 7 x 10: 720pp  
Hb: 978-0-367-55278-7: **£150.00**  
Pb: 978-1-032-03089-0: **£68.99**  
eBook: 978-1-003-09274-2  
Prev. Ed Hb: 978-1-439-86189-9

\* For full contents and more information, visit: [www.routledge.com/9780367552787](http://www.routledge.com/9780367552787)

## Authenticity of Foods of Plant Origin

Edited by **Konstantinos Kotsanopoulos**, Researcher in University of Thessaly, School of Agricultural Sciences, Department of Ichthyology and Aquatic Environment, Greece  
EMEA Commercial Regulatory Manager - Univar Ltd, UK

Series: *Food Biology Series*

Authenticity of Foods of Plant Origin consists of five parts that collect and classify the terms of authenticity of foods from plant origins. The book discusses traceability and its implementation in the industry, along with relevant techniques, and how to verify authenticity with the current methods and techniques used in the food industry. It refers to specific categories of representative food products of plant origin as well as covering the most important processed foods that originate from plants with regards to authenticity. The book summarizes the EU, US, and Canadian legislation to provide a clear view of the current guidelines.

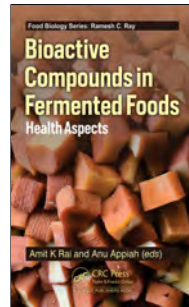
CRC Press

**Market:** Food & Culinary Science  
December 2021: 235 x 156: 425pp  
Hb: 978-0-367-14653-5: **£141.00**  
eBook: 978-0-429-05294-1

\* For full contents and more information, visit: [www.routledge.com/9780367146535](http://www.routledge.com/9780367146535)

## Bioactive compounds in Fermented Foods

Health Aspects



Edited by **Amit Kumar Rai** and **Anu Appaiah KA**, Central Food Technological Research Institute, Mysore, Karnataka, India

Series: *Food Biology Series*

This volume reviews the health benefits of the different types of bioactive components produced during food fermentation. In recent years a lot of attention has been given on characterisation of bioactive compounds and their impact on human health to develop functional foods against different metabolic disorders. The bioactive compounds are produced either during biotransformation of food metabolites or directly produced by microorganisms. The book discusses different types of bioactive compounds and concludes with the impact of gut fermentation on production of bioactive compounds with

specific human health.

CRC Press

**Market:** Food & Culinary Science  
September 2021: 6.14 x 9.21: 325pp  
Hb: 978-0-367-13600-0: **£155.00**  
eBook: 978-0-429-02741-3

\* For full contents and more information, visit: [www.routledge.com/9780367136000](http://www.routledge.com/9780367136000)

## Bioactive Peptides

Production, Bioavailability, Health Potential, and Regulatory Issues



Edited by **John Oloche Onuh**, Center for Molecular and Translational Medicine, Georgia State University, **M. Selvamuthukumar**, Institute of Technology, Haramaya University and **Yashwant V Pathak**

Series: *Nutraceuticals*

In this newest addition to the series *Nutraceuticals: Basic Research and Clinical Applications*, *Bioactive Peptides: Production, Bioavailability, Health Potential and Regulatory Issues* provides a comprehensive review of the current state of knowledge in the field of food protein hydrolysates and bioactive peptides, their food sources, bioavailability, production, applications, functionalities, health potentials and regulatory issues governing

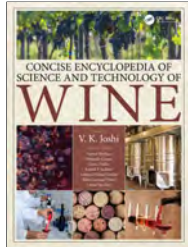
its use.

CRC Press

**Market:** Food Science & Technology  
June 2021: 6.14 x 9.21: 508pp  
Hb: 978-0-367-51177-7: **£175.00**  
eBook: 978-1-003-05277-7

\* For full contents and more information, visit: [www.routledge.com/9780367511777](http://www.routledge.com/9780367511777)

## Concise Encyclopedia of Science and Technology of Wine



Edited by V. K. Joshi

*Concise Encyclopedia of Science and Technology of Wine* contains the most comprehensive, yet still succinct, collection of information on the science and technology of wine making. With 45 chapters contributed by leading experts in their fields, it is an indispensable treatise offering extensive details of the processes of wine making. The book is an incomparable resource for oenologists, food scientists, biotechnologists, postharvest technologists, biochemists, fermentation technologists, nutritionists, chemical engineers, microbiologists, toxicologists, organic chemists, and the undergraduate and postgraduate students of these disciplines.

CRC Press

**Market:** Food & Culinary Science

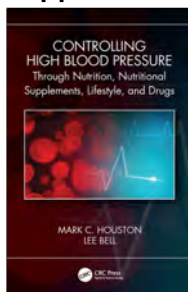
July 2021: 8.25 x 11: 710pp

Hb: 978-1-138-09275-4: **£300.00**

eBook: 978-1-315-10729-5

\* For full contents and more information, visit: [www.routledge.com/9781138092754](http://www.routledge.com/9781138092754)

## Controlling High Blood Pressure through Nutrition, Supplements, Lifestyle and Drugs



Mark C. Houston, Vanderbilt Medical School and The Hypertension Institute of Nashville, Tennessee, USA and Lee Bell

High blood pressure or hypertension is the most common primary diagnosis in the United States. Despite extensive research over the past several decades, the cause of most cases of adult hypertension is still unknown and thought to be genetic. Current methods of controlling blood pressure in the general population is inadequate, high blood pressure may result in heart attack, heart failure, stroke, or kidney failure. This book provides an integrative approach on how to prevent and treat high blood pressure. It includes scientific research and clinical applications which helps patients learn easy solutions to

implement and manage hypertension.

CRC Press

**Market:** Food & Nutrition

June 2021: 6.14 x 9.21: 302pp

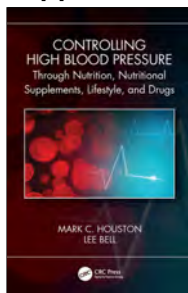
Hb: 978-0-367-65379-8: **£122.99**

Pb: 978-0-367-64779-7: **£48.99**

eBook: 978-1-003-12919-6

\* For full contents and more information, visit: [www.routledge.com/9780367653798](http://www.routledge.com/9780367653798)

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Mark C. Houston, Vanderbilt Medical School and The Hypertension Institute of Nashville, Tennessee, USA and Lee Bell

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implement and manage hypertension.

CRC Press

**Market:** Food & Nutrition

June 2021: 6.14 x 9.21: 302pp

Hb: 978-0-367-65379-8: **£122.99**

Pb: 978-0-367-64779-7: **£48.99**

eBook: 978-1-003-12919-6

\* For full contents and more information, visit: [www.routledge.com/9780367647797](http://www.routledge.com/9780367647797)

## Handbook of Cereals, Pulses, Roots, and Tubers

Functionality, Health Benefits, and Applications

Edited by Sneh Punia, Department of Food Science and technology, Chaudhary Devi Lal University, Sirsa, India, Anil Kumar Siroha, Chaudhary Devi Lal University and Manoj Kumar

Cereals, pulses, roots, and tubers are major food sources worldwide and make a substantial contribution to the intake of carbohydrates, protein, fiber, as well as vitamin E and B. The *Handbook of Cereals, Pulses, Roots, and Tubers: Functionality, Health Benefits, and Applications* provides information about commercial cereals, pulses, and their nutritional profile, as well as health benefits and their food and non-food applications. Split into four major subsections, this handbook covers all the recent research about the related crops and outlines matters needing further research in the field of agriculture sciences.

CRC Press

**Market:** Food Science & Technology

September 2021: 7 x 10: 632pp

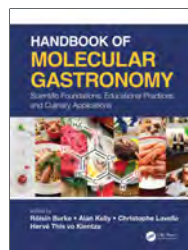
Hb: 978-0-367-69250-6: **£190.00**

eBook: 978-1-003-15550-8

\* For full contents and more information, visit: [www.routledge.com/9780367692506](http://www.routledge.com/9780367692506)

## Handbook of Molecular Gastronomy

Scientific Foundations, Educational Practices, and Culinary Applications



Edited by Róisín Burke, Technological University Dublin, Ireland, Alan Kelly, University College Cork, Ireland, Christophe Lavelle, National Museum of Natural History - CNRS UMR 7196, Paris and Hervé This vo Kientza, INRAE/AgroParisTech

A comprehensive reference to molecular gastronomy, this book highlights techniques that have enabled chefs to achieve new and better ways of preparing food. The book takes an interdisciplinary approach encompassing the physics, biology, and chemistry of food as well as food preparation along with practical tips on molecular cooking. It offers an introductory

overview and perspective on key issues and contains a complete A-Z guide to scientific terminology, ingredients, tools, and methods, as well as innovative recipes by world-renowned chefs.

CRC Press

**Market:** Food Science and Technology

June 2021: 8.25 x 11: 894pp

Hb: 978-1-466-59478-4: **£190.00**

eBook: 978-0-429-16870-3

\* For full contents and more information, visit: [www.routledge.com/9781466594784](http://www.routledge.com/9781466594784)

## Heat and Mass Transfer Modelling During Drying

Empirical to Multiscale Approaches

Edited by Mohammad U.H. Joardder, Washim Akram and Azharul Karim, Queensland University of Technology, Brisbane, Australia

Most of the conventional dryer uses random heating to dry diverse materials without considering their thermal sensitivity and energy requirement for drying. Eventually, excess energy consumption is required along with attaining low quality dried product. Proper heat and mass transfer modeling prior to designing drying system for selected food materials can overcome these problems. *Heat and Mass Transfer Modelling During Drying: Empirical to Multiscale Approaches* extensively discusses the issue of prediction of energy consumption in terms of heat and mass transfer simulation.

CRC Press

**Market:** Life Science

September 2021: 6 x 9: 220pp

Hb: 978-1-138-62402-3: **£155.00**

eBook: 978-0-429-46104-0

\* For full contents and more information, visit: [www.routledge.com/9781138624023](http://www.routledge.com/9781138624023)

## Improving Women's Health Across the Lifespan

Edited by Michelle Tollefson, Nancy Eriksen and Neha Pathak

Series: *Lifestyle Medicine*

The book is an evidence-based source of information on women's health issues for health professionals already practicing lifestyle medicine, as well as an entry level textbook for those new to the field of lifestyle medicine. The collective expertise of each of the editors along with content provided by leaders within the American College of Lifestyle Medicine fills a much-needed void within the specialty of Lifestyle Medicine and is for providers of women's health globally.

CRC Press

Market: Public Health

October 2021: 6.14 x 9.21: 552pp

Hb: 978-0-367-62763-8: £130.00

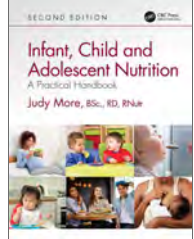
eBook: 978-1-003-11068-2

\* For full contents and more information, visit: [www.routledge.com/9780367627638](http://www.routledge.com/9780367627638)

2nd Edition

## Infant, Child and Adolescent Nutrition

A Practical Handbook



Judy More, Freelance Paediatric Dietitian and Registered Nutritionist, London, UK

*Infant, Child and Adolescent Nutrition: A Practical Guide, Second Edition*, is an evidence-based, practical guide introducing readers to the theory behind optimal child nutrition. Containing practical advice on how to put that theory into practice, this new edition facilitates learning through case studies, key points, and learning activities. Divided into seven sections, chapters cover prenatal nutrition and nutrition throughout childhood from preterm babies to adolescents up to the age of 18. It serves as a useful reference for individuals responsible for the nutritional health

of children in primary care and community settings.

CRC Press

Market: Clinical Medicine

June 2021: 6.85 x 9.69: 308pp

Hb: 978-0-367-55456-9: £74.99

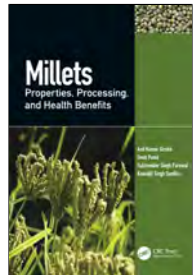
Pb: 978-0-367-55455-2: £42.99

eBook: 978-1-003-09365-7

\* For full contents and more information, visit: [www.routledge.com/9780367554569](http://www.routledge.com/9780367554569)

## Millets

Properties, Processing, and Health Benefits



Anil Kumar Siroha, Chaudhary Devi Lal University, Sneh Punia, Department of Food Science and technology, Chaudhary Devi Lal University, Sirsa, India, Sukhvinder Singh Purewal, MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY and Kawaljit Singh Sandhu

This book explores millet production, chemistry and nutritional aspects, processing technologies, product formulations, and more. It combines information on the composition, functional properties and processing along with information on the health properties of millets. With its unique presentation on millets flour and starch, it will be suitable for those wanting to use millets in various food products, including food technologists,

nutritionists, research scientists, and agriculture professionals.

CRC Press

Market: Food Science & Technology

July 2021: 6 x 9: 272pp

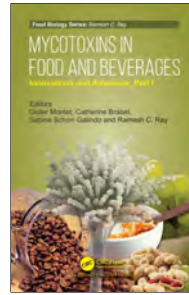
Hb: 978-0-367-56274-8: £155.00

eBook: 978-1-003-10594-7

\* For full contents and more information, visit: [www.routledge.com/9780367562748](http://www.routledge.com/9780367562748)

## Mycotoxins in Food and Beverages

Innovations and Advances Part I



Edited by Didier Montet, Catherine Brabet, Ramesh C. Ray and Sabine Galindo

Series: *Food Biology Series*

The book reviews the latest literature and innovations on important aspects of mycotoxins, e.g. mycotoxin producing fungi and the related ecosystems, mycotoxin occurrence, toxicity, analysis and management. Quantitative estimations of impacts of climate change on mycotoxin occurrence have been made recently, using predictive modelling. There is also a growing interest in the occurrence and toxicity of multiple mycotoxins in food and feed, including emerging or modified forms of mycotoxins. Innovative tools were also developed to detect and quantify toxinogenic fungi and their toxins.

CRC Press

Market: Food Biology

June 2021: 6.14 x 9.21: 308pp

Hb: 978-0-367-42209-7: £125.00

eBook: 978-1-003-03581-7

\* For full contents and more information, visit: [www.routledge.com/9780367422097](http://www.routledge.com/9780367422097)

## Nanoemulsions in Food Technology

Development, Characterization, and Applications

Edited by Javed Ahmad, College of Pharmacy, Najran University and Leo M.L. Nollet, Univ. College Ghent, BE (Retired)

Series: *Food Analysis & Properties*

Divided into three sections, *Nanoemulsions in Food Technology: Development, Characterization, and Applications* will provide in-depth information and comprehensive discussion over technologies, physical and nanostructural characterization, as well as applicability of the nanoemulsion technique in food sciences. It describes the techniques involved in nanoemulsion characterization, mainly dealing with interfacial and nanostructural characterization of nanoemulsions, different physical characterization techniques, as well as various imaging and separation techniques involved in its characterization.

CRC Press

Market: Food Science & Technology

October 2021: 7 x 10: 320pp

Hb: 978-0-367-61492-8: £155.00

eBook: 978-1-003-12112-1

\* For full contents and more information, visit: [www.routledge.com/9780367614928](http://www.routledge.com/9780367614928)

## Non-Thermal Processing Technologies for the Dairy Industry

Edited by M. Selvamuthukumaran, Institute of Technology, Haramaya University and Sajid Maqsood

There are some emerging non-thermal processing techniques such as pulsed light, cold plasma, high pressure processing, ultrasonic, UV pasteurization, or ozone treatments, which can be successfully employed in dairy processing industries to enhance product acceptability, safety, and quality aspects. This book describes several emerging non-thermal processing techniques that can be specially employed for the dairy processing industry. The book narrates the benefits of using pulsed light, cold plasma, high pressure and ultrasonic during processing of various dairy products.

CRC Press

Market: Food Science & Technology

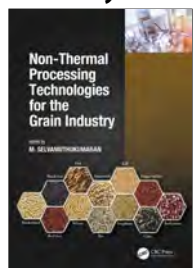
November 2021: 7 x 10: 200pp

Hb: 978-0-367-67517-2: £155.00

eBook: 978-1-003-13871-6

\* For full contents and more information, visit: [www.routledge.com/9780367675172](http://www.routledge.com/9780367675172)

## Non-Thermal Processing Technologies for the Grain Industry



Edited by **M. Selvamuthukumar**

Food can rapidly spoil due to growth of microorganisms, and traditional methods of food preservation such as drying, canning, salting, curing, and chemical preservation can affect the quality of the food. Nowadays, various non-thermal processing techniques can be employed in grain processing industries to combat this. Such techniques will satisfy consumer demand for delivering wholesome food products to the market. *Non-Thermal Processing Technologies for the Grain Industry* addresses these many new non-thermal food processing techniques that are used during grain processing and minimize microbial contamination and spoilage.

CRC Press

**Market:** Food Science & Technology

August 2021: 7 x 10: 304pp

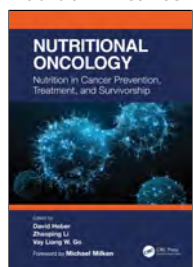
Hb: 978-0-367-60857-6: **£160.00**

eBook: 978-1-003-10950-1

\* For full contents and more information, visit: [www.routledge.com/9780367608576](http://www.routledge.com/9780367608576)

## Nutritional Oncology

Nutrition in Cancer Prevention, Treatment, and Survivorship



Edited by **David Heber**, David Geffen School of Medicine UCLA, US, **Zhaoping Li**, David Geffen School of Medicine UCLA, US and **Vay Liang**, David Geffen School of Medicine UCLA

*Nutritional Oncology: Nutrition in Cancer Prevention, Treatment, and Survivorship* presents evidence-based approaches to the study and application of nutrition in all phases of cancer including prevention, treatment, and survivorship. Precision oncology, targeted therapies and immunonutrition have led to advances in cancer treatment and prevention. Highlighting insights from Precision Oncology and Precision Nutrition to improve cancer prevention, treatment and survival is the core

mission of this book. Created by editors with over 40 years of clinical and research experience, this book is written for healthcare professional advising cancer patients and cancer survivors.

CRC Press

**Market:** Medicine

August 2021: 7 x 10: 520pp

Hb: 978-0-367-27249-4: **£150.00**

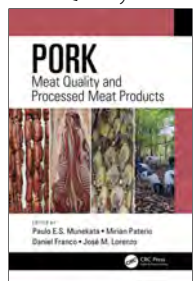
Pb: 978-1-032-00261-3: **£74.99**

eBook: 978-0-429-31738-5

\* For full contents and more information, visit: [www.routledge.com/9780367272494](http://www.routledge.com/9780367272494)

## Pork

Meat Quality and Processed Meat Products



Edited by **Paulo E.S. Munekata**, Mirian Paterio, Daniel Franco and **José M. Lorenzo**

This book delves into the various kinds of pork and their manufacturing processes. A variety of pork meat products are currently being produced worldwide. However, due to the modern eating habits, the increasing importance between food composition and health among consumers, and the demand for products with specific health "benefits" are factors that are influencing the research and production of pork meat products.

CRC Press

**Market:** Food Science & Technology

September 2021: 6.14 x 9.21: 478pp

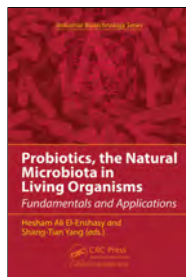
Hb: 978-0-367-34123-7: **£155.00**

eBook: 978-0-429-32403-1

\* For full contents and more information, visit: [www.routledge.com/9780367341237](http://www.routledge.com/9780367341237)

## Probiotics, the Natural Microbiota in Living Organisms

Fundamentals and Applications



Edited by **Hesham Ali El-Enshasy**, Institute of Bioproduct Development, Faculty of Chemical Engineering and Energy, Universiti Teknologi Malaysia, Johor Bahru, Malaysia and **Shang-Tian Yang**, Department of Chemical and Biomolecular Engineering, The Ohio State University, Columbus, Ohio, USA

*Series: Industrial Biotechnology*

This book provides a comprehensive review on the recent trends and future prospects of probiotic research and potential industrial applications. It begins with an overview on the fundamental research about the different classes of microbiota and extends to a wide array of applications of beneficial microbes in human and animal wellness. This book is written and edited by leading internationally renowned experts in the field of probiotics.

CRC Press

**Market:** Food & Culinary Science

September 2021: 6.14 x 9.21: 380pp

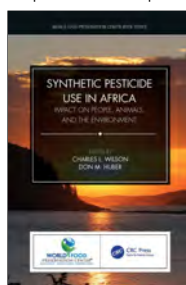
Hb: 978-1-138-49360-5: **£150.00**

eBook: 978-1-351-02754-0

\* For full contents and more information, visit: [www.routledge.com/9781138493605](http://www.routledge.com/9781138493605)

## Synthetic Pesticide Use in Africa

Impact on People, Animals, and the Environment



Edited by **Charles L. Wilson** and **Don M. Huber**, Purdue University, Idaho, USA

*Series: World Food Preservation Center Book Series*

It is hoped that the knowledge available in *Synthetic Pesticide Use in Africa: Impact on People, Animals, and the Environment* will both enlighten the reader to present serious concerns on the use of synthetic pesticides, and motivate society to make the changes necessary for the sustainable production of safe, nutritious, and affordable food for the anticipated 250 billion inhabitants of this Earth in 2050.

CRC Press

**Market:** Food Science & Technology

July 2021: 7 x 10: 268pp

Hb: 978-0-367-43677-3: **£155.00**

eBook: 978-1-003-00703-6

\* For full contents and more information, visit: [www.routledge.com/9780367436773](http://www.routledge.com/9780367436773)

## Traditional Herbal Therapy for the Human Immune System



Edited by **Azamal Husen**, Wolaita Sodo University, Ethiopia

*Series: Exploring Medicinal Plants*

Drawing on indigenous and scientific knowledge of medicinal plants, *Traditional Herbal Therapy for the Human Immune System* presents the protective and therapeutic potential of plant-based drinks, supplements, nutraceuticals, synergy food, superfoods, and other products. It explains how medicinal plants can act as a source of vitamins and improve body functions such as enhanced oxygen circulation, maintained blood pressure and improved mood. Part of the *Exploring Medicinal Plants* series, this book is useful for researchers and students, as well as policy makers and people working in industry, who have an interest in plant-derived medications.

CRC Press

**Market:** Nutrition

October 2021: 6.14 x 9.21: 392pp

Hb: 978-0-367-68525-6: **£150.00**

eBook: 978-1-003-13795-5

\* For full contents and more information, visit: [www.routledge.com/9780367685256](http://www.routledge.com/9780367685256)

## A Field Guide to Ghost Guns

For Police and Forensic Investigations

Robert E. Walker, Lee County Sheriff's Office, Fort Myers, Florida, USA

A Field Guide to Ghost Guns: For Police and Forensic Investigators addresses the current, and technical aspects of the self-made firearm, so-called "ghost guns." The book looks at the intersection of technology, scalable manufacturing, and widely available parts that enable individuals to assemble and build their own firearm. Avoiding the gun rights versus gun control debate chapters provide an understanding of what constitutes a ghost gun and the legal relevance and investigative significance of them.

CRC Press

**Market:** Firearms/Police Science  
November 2021: 6.14 x 9.21: 224pp  
Hb: 978-0-367-49095-9: **£120.00**  
Pb: 978-1-032-12530-5: **£46.99**  
eBook: 978-1-003-04449-9

\* For full contents and more information, visit: [www.routledge.com/9780367490959](http://www.routledge.com/9780367490959)



## Courtroom Testimony for Fingerprint Examiners

Hillary Moses Daluz

Courtroom Testimony for Fingerprint Examiners addresses all aspects of courtroom testimony as the first book to focus solely on testifying on fingerprint evidence as a comparative science. The book presents how fingerprint examiners can develop, research, and defend the scientific basis of their conclusions.

CRC Press

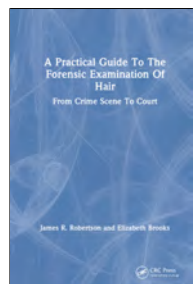
**Market:** Policing/Forensic Science  
August 2021: 6.14 x 9.21: 266pp  
Hb: 978-0-367-48090-5: **£120.00**  
Pb: 978-1-032-05098-0: **£59.99**  
eBook: 978-1-003-03794-1

\* For full contents and more information, visit: [www.routledge.com/9780367480905](http://www.routledge.com/9780367480905)



## A Practical Guide To The Forensic Examination Of Hair

From Crime Scene To Court



James R. Robertson, Forensic & Data Centres, Australian Federal Police, Canberra and Elizabeth Brooks

A Practical Guide to the Forensic Examination of Hair presents current best practices and methodologies—for forensic microscopists and trace evidence analysts, in addition to lawyers and judges—detailing the utilization of hair evidence in court cases. Coverage includes the collection and preservation of hair evidence, criteria for selecting hairs suitable for DNA extraction and testing, as well as the criminalistic value of hairs and their microscopic features illustrated in full colour. A must-have professional resource for forensic and legal professionals in the handling and analysis of all hair evidence

CRC Press

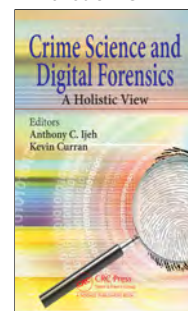
**Market:** Forensics and Criminal Justice  
October 2021: 6.14 x 9.21: 256pp  
Hb: 978-1-138-62861-8: **£120.00**  
Pb: 978-1-032-10861-2: **£68.99**  
eBook: 978-1-315-21065-0

\* For full contents and more information, visit: [www.routledge.com/9781138628618](http://www.routledge.com/9781138628618)



## Crime Science and Digital Forensics

A Holistic View



Edited by Anthony C. Ijeh, Strategy International, Thessaloniki, Greece and Kevin Curran, Ulster University

Crime science and digital forensics: A holistic view, is a collection of articles which contribute to the discourse on counter forensic practices and digital investigative methods from a crime science perspective. The book also shares alternative dialogue on information security techniques used to protect data from unauthorised access and manipulation. Scandals at OPCW and Gatwick Airport have reinforced the importance of Crime Science and the need to take proactive measures rather than a wait and see approach currently used by many organisations.

CRC Press

**Market:** Forensic Science  
September 2021: 6.14 x 9.21: 250pp  
Hb: 978-0-367-32255-7: **£105.00**  
eBook: 978-0-429-32287-7

\* For full contents and more information, visit: [www.routledge.com/9780367322557](http://www.routledge.com/9780367322557)

2nd Edition

## Comparative Bone Identification

Human Subadult and Nonhuman - A Field Guide

Diane L. France, Colorado State University, Fort Collins, USA

Comparative Bone Identification: Human Subadult to Nonhuman – A Field Guide offers users a practical comparative guide that presents the differences among animal species' and adult subhumans for nearly all bones in the body. The book serves as a valuable resource of easy-to-access information to investigators and forensic anthropologists for use in the laboratory or in the field.

CRC Press

**Market:** Forensic/Anthropology  
August 2021: 6.14 x 9.21: 296pp  
Hb: 978-1-032-04132-2: **£120.00**  
Pb: 978-0-367-48451-4: **£54.99**  
eBook: 978-1-003-03981-5  
Prev. Ed Hb: 978-1-439-82043-8

\* For full contents and more information, visit: [www.routledge.com/9781032041322](http://www.routledge.com/9781032041322)

## Cybercrime and Information Technology

Theory and Practice: The Computer Network Infrastructure and Computer Security, Cybersecurity Laws, Internet of Things (IoT), and Mobile Devices

Alex Alexandrou

Cybercrime and Information Technology strikes the proper balance of core concepts—addressing the fundamentals of computers, mobile devices, and networked systems—while looking at next generation threats and technology solutions to collect digital evidence and counter such threats. It's a welcome addition to the literature, particularly for professors seeking a hands-on, forward-looking approach to technology and trends. Coverage is applicable to all forensic science courses in computer science and forensic programs, particularly those housed in criminal justice departments emphasizing digital evidence and investigation processes.

CRC Press

**Market:** IT/Network/Computer Forensics  
November 2021: 7 x 10: 358pp  
Hb: 978-0-367-25157-4: **£120.00**  
Pb: 978-1-032-05385-1: **£58.99**  
eBook: 978-0-429-31872-6

\* For full contents and more information, visit: [www.routledge.com/9780367251574](http://www.routledge.com/9780367251574)



3rd Edition

**DiMaio's Forensic Pathology**

Vincent J.M. DiMaio, Chief Medical Examiner, Bexar County, San Antonio, Texas, USA and D. Kimberley Molina

Series: *Practical Aspects of Criminal and Forensic Investigations*

DiMaio's Forensic Pathology, Third Edition is the latest edition of what many consider the original, and definitive, pathology text. The book is illustrated in full-color and fully up-to-date to include the latest advances in DNAm anthropology, and forensic pathology in the forensic determination of death. Maintaining its concise, easy-to-read format, with completely updated references and photographs, the book is a highly anticipated work in line with Dr. DiMaio's legacy of producing invaluable professional resources.

CRC Press

Market: Medical/Forensic Pathology

September 2021: 7 x 10: 562pp

Hb: 978-0-367-25148-2: **£110.00**

eBook: 978-0-429-31876-4

Prev. Ed Hb: 978-0-849-30072-1

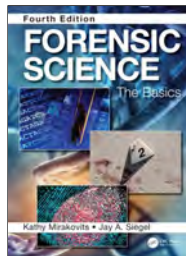
\* For full contents and more information, visit: [www.routledge.com/9780367251482](http://www.routledge.com/9780367251482)



4th Edition

**Forensic Science**

The Basics



Kathy Mirakovits, Portage Northern High School, Michigan, USA and Jay A Siegel, Consultant in Forensic Science Emeritus Professor of Forensic Science - Michigan State University

Forensic Science, 4e follows in the tradition of best-selling prior editions: a comprehensive introductory text presenting core, fundamental concepts in forensic science. Coverage is completely updated with new sections on forensic palynology and taphonomy, new case studies throughout, and an entirely new chapter on forensic psychology. The Fourth Edition will continue to serve as comprehensive text introducing students to core, fundamental concepts in the various disciplines of

forensic science

CRC Press

Market: Forensic Science/Criminal Justice

July 2021: 8.25 x 11: 738pp

Hb: 978-0-367-25149-9: **£74.99**

eBook: 978-0-429-31875-7

Prev. Ed Hb: 978-1-482-22333-0

\* For full contents and more information, visit: [www.routledge.com/9780367251499](http://www.routledge.com/9780367251499)

**Forensic Forestry**

A Guidebook for Foresters on the Witness Stand

Robert P. Latham

Forensic Forestry: A Guidebook for Foresters on the Witness Stand is a one-of-a-kind, hands-on resource for those forestry and land use professionals called upon to work on legal cases and testify in court. This includes foresters and forestry managers, ecologists, environmentalists, environmental policy advocates, and those in related fields.

CRC Press

Market: Environmental Policy/Forestry/Forensic

August 2021: 6.14 x 9.21: 128pp

Hb: 978-1-032-01751-8: **£120.00**

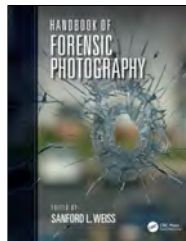
Pb: 978-1-032-02251-2: **£54.99**

eBook: 978-1-003-18255-9

\* For full contents and more information, visit: [www.routledge.com/9781032017518](http://www.routledge.com/9781032017518)

**Handbook of Forensic Photography**

Sanford L Weiss



Handbook of Forensic Photography is the definitive reference and learning guide for the use of photography in the capture and presentation of forensic evidence. The author has recruited over 40 of the world's most renowned experts in their fields to provide the police and forensic community with the most up-to-date techniques, technology, and best practices.

CRC Press

Market: Photography/Forensic Science

October 2021: 8.25 x 11: 732pp

Hb: 978-0-367-49893-1: **£89.99**

eBook: 978-1-003-04796-4

\* For full contents and more information, visit: [www.routledge.com/9780367498931](http://www.routledge.com/9780367498931)



2nd Edition

**Forensic Psychology and Neuropsychology for Criminal and Civil Cases**

Edited by Harold V. Hall, Pacific Institute for the Study of Aggression, Kamuela, Hawaii, USA and Joseph Poirier, Clinical Psychologist, Silver Spring, Maryland, USA

Series: *Pacific Institute Series on Forensic Psychology*

Forensic Psychology and Neuropsychology for Criminal and Civil Cases, 2e is an encyclopedic work that addresses both psychological and neuropsychological concepts in the context of the legal system, providing a practical understanding and application of behavioral, legal, and ethical issues in civil and criminal cases. It serves as an invaluable resource to clinicians, experts witnesses, and legal professionals—a helpful adjunct for mental health experts to formulate sound direct and cross-examination strategies, and eliciting suggestions for forensically-related treatment and intervention.

CRC Press

Market: Psychology/Legal Studies

November 2021: 7 x 10: 848pp

Hb: 978-0-367-41526-6: **£110.00**

Pb: 978-1-032-10028-9: **£69.99**

eBook: 978-1-003-21330-7

Prev. Ed Hb: 978-0-849-38173-7

\* For full contents and more information, visit: [www.routledge.com/9780367415266](http://www.routledge.com/9780367415266)



3rd Edition

**Hazard Mitigation and Preparedness**

An Introductory Text for Emergency Management and Planning Professionals



Dylan Sandler, The University of North Carolina at Chapel Hill, USA and Anna K. Schwab, The University of North Carolina at Chapel Hill, USA

An essential text for today's emerging professionals and higher education community, the third edition of *Hazard Mitigation and Preparedness* provides accessible and actionable strategies to create safer, more resilient communities. Known and valued for its balanced approach, *Hazard Mitigation and Preparedness* assumes no prior knowledge of the subject, presenting the major principles involved in preparing for and mitigating the impacts of hazards in emergency management. Updated real-world examples of different tools and techniques allows for the

application of knowledge and skills.

Routledge

Market: Homeland Security / Hazards & Disasters

September 2021: 7 x 10: 412pp

Hb: 978-0-367-63577-0: **£59.99**

eBook: 978-1-003-12389-7

Prev. Ed Hb: 978-1-466-59556-9

\* For full contents and more information, visit: [www.routledge.com/9780367635770](http://www.routledge.com/9780367635770)



4th Edition

**Homeland Security**

An Introduction to Principles and Practice

Charles P. P. Nemeth, John Jay College of Criminal Justice, New York, USA

Homeland Security: An Introduction to Principles and Practice, Fourth Edition continues its record of providing a fully updated, no-nonsense textbook to reflect the latest policy, operational, and program changes to the Department of Homeland Security (DHS) over the last several years. The book presents the various DHS state and federal agencies and entities within the government—their role, how they operate, their structure, and how they interact with other agencies—to protect U.S. domestic interests from various dynamic threats.

CRC Press

**Market:** Politics/Homeland Security

September 2021: 7 x 10: 592pp

Hb: 978-0-367-49441-4: **£58.99**

eBook: 978-1-003-17605-3

Prev. Ed Hb: 978-1-498-74909-1

\* For full contents and more information, visit: [www.routledge.com/9780367494414](http://www.routledge.com/9780367494414)**Next Generation Sequencing in Forensic Science**

A Primer



Kelly M. Elkins and Cynthia B. Zeller

Next Generation Sequencing in Forensic Science is the first book to prepare practitioners to utilize and implement this new technology into their lab for forensic casework, highlighting early applications of how NGS results have been used in court. The book can also be utilized for upper-level undergraduate and graduate students taking courses focused on NGS concepts.

CRC Press

**Market:** Genetics/DNA/Forensic

September 2021: 6.14 x 9.21: 162pp

Hb: 978-0-367-47893-3: **£120.00**Pb: 978-1-032-07204-3: **£48.99**

eBook: 978-1-003-19646-4

\* For full contents and more information, visit: [www.routledge.com/9780367478933](http://www.routledge.com/9780367478933)

3rd Edition

**Introduction to Homeland Security**

David H. McElreath, University of Mississippi, USA, Daniel Adrian Doss, Barbara Russo, Greg Etter, University of Central Missouri, Warrensburg, USA, Jeffrey Van Slyke, Jacksonville State University, Anniston, Alabama, USA, Joseph Skinner, Michael Corey, Carl J. Jensen III, University of Mississippi, University, USA, Michael Wigginton, Jr., University of Mississippi, University, USA and Robert Nations, Shelby County Office of Preparedness for Memphis, Tennessee, USA

Introduction to Homeland Security, Third Edition provides the latest developments in the policy and operations of domestic security efforts of the agencies under the U.S. Department of Homeland Security. The new edition is completely updated and

includes coverage of topics relevant to homeland security operations not covered in any other text currently available. The book ends with a look at the future, possible new and emerging threats and possible creative solutions—and initiatives in the works—to respond to and address such threats.

CRC Press

**Market:** Political Science/Homeland Security

June 2021: 7 x 10: 495pp

Hb: 978-1-138-58899-8: **£120.00**Pb: 978-1-032-01111-0: **£52.99**

eBook: 978-0-429-49196-2

Prev. Ed Hb: 978-1-439-88752-3

\* For full contents and more information, visit: [www.routledge.com/9781138588998](http://www.routledge.com/9781138588998)**Pathology of Sharp Force Trauma**

Peter Vanezis, Queen Mary University of London, England, UK

Of use and applicable to all forensic pathologists throughout the world, Pathology of Sharp Force Trauma covers all aspects of the pathology of sharp force trauma and its clinico-pathological interrelationship from the forensic (medico-legal perspective). It is intended to be a highly-illustrated reference manual and practical guide for forensic pathologists and medical examiners. Globally, most sharp force trauma is caused by knife injuries hence the emphasis will be based on such injuries although other implements and objects such as glass will also be described and fully illustrated

in color in great detail.

CRC Press

**Market:** Forensic Pathology

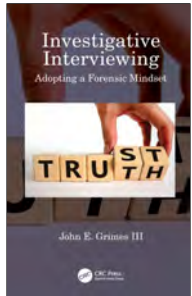
July 2021: 8.25 x 11: 322pp

Hb: 978-1-498-76862-7: **£114.00**

eBook: 978-1-498-76863-4

\* For full contents and more information, visit: [www.routledge.com/9781498768627](http://www.routledge.com/9781498768627)**Investigative Interviewing**

Adopting a Forensic Mindset



John E. Grimes III

Investigative Interviewing: Adopting a Forensic Mindset is a straight-forward, practical textbook outlining proper interview planning and techniques, including all relevant case law concerning confessions. The book promotes legal, real-world ethical investigative interviewing methods; it is a welcome addition to the literature for use in forensic science and criminal justice curricula and programs.

CRC Press

**Market:** Criminal Justice/Interviewing

August 2021: 6.14 x 9.21: 288pp

Hb: 978-0-367-77146-1: **£120.00**Pb: 978-0-367-77191-1: **£54.99**

eBook: 978-1-003-17015-0

\* For full contents and more information, visit: [www.routledge.com/9780367771461](http://www.routledge.com/9780367771461)

3rd Edition

**Practical Aspects of Interview and Interrogation**

David E. Zulawski, Wicklander-Zulawski & Associates, Inc., Downers Grove, Illinois, USA, Douglas E. Wicklander, Wicklander-Zulawski & Associates, Inc., Downers Grove, Illinois, USA, Shane G. Sturman, Wicklander-Zulawski & Associates, Inc., Downers Grove, Illinois, USA and L. Wayne Hoover, Wicklander-Zulawski & Associates, Inc., Downers Grove, Illinois, USA

*Series: Practical Aspects of Criminal and Forensic Investigations*

Techniques for interview and interrogation have become even more sophisticated and complex in recent years. With all chapters revised and expanded, the third edition of this bestselling book provides the latest information on establishing credibility as well as interpreting verbal and physical behavior, among other important topics. The text includes two new chapters that address juvenile interrogations and profiling. In addition, all of the existing chapters have been updated to reflect the current state of interrogation and interviewing techniques. This popular title remains essential for criminal justice professionals.

CRC Press

October 2021: 6.14 x 9.21: 450pp

Hb: 978-1-439-83015-4: **£57.99**

Prev. Ed Hb: 978-0-849-30101-8

\* For full contents and more information, visit: [www.routledge.com/9781439830154](http://www.routledge.com/9781439830154)

## Processing Vehicles Used in Violent Crimes for Forensic Evidence

Christopher D. Duncan

Processing Vehicles Used in Violent Crimes for Forensic Evidence is geared towards crime scene investigators and forensic technicians—outlining steps and methods to overcome unique challenges posed by vehicle and vehicular crime scenes—for those who process vehicles used in crimes, especially violent crimes. Criminal justice and forensic science students also will find it useful, as will attorneys, death and fire investigators, accident scene investigators and scene reconstructionists.

CRC Press

**Market:** Forensic & Police Science

October 2021: 7 x 10: 384pp

Hb: 978-1-032-06889-3: **£120.00**

Pb: 978-1-032-07933-2: **£64.99**

eBook: 978-1-003-20433-6

\* For full contents and more information, visit: [www.routledge.com/9781032068893](http://www.routledge.com/9781032068893)



## 2nd Edition Security Operations

An Introduction to Planning and Conducting Private Security Details for High-Risk Areas



Robert H. Deatherage, Jr. and Robert H. Deatherage, Jr.

Security Operations, Second Edition provides readers with an understanding of concepts to be followed in protective services—rules that comprise good and safe security practice, and that detail proper tactics and techniques. Oftentimes, military, police, and security training received is incomplete. This book addresses this by explaining the basics of surveillance, threat assessment and detection, advance planning, route analysis, and building security to properly deploy protection team resources.

CRC Press

**Market:** Personal Security/Terrorism

June 2021: 6.14 x 9.21: 268pp

Hb: 978-0-367-68683-3: **£120.00**

Pb: 978-0-367-68836-3: **£58.99**

eBook: 978-1-003-13925-6

\* For full contents and more information, visit: [www.routledge.com/9780367686833](http://www.routledge.com/9780367686833)



## 2nd Edition Survival Driving

Staying Alive on the World's Most Dangerous Roads



Robert H. Deatherage, Jr.

Survival Driving, Second Edition was written to inform and protect: to keep people alive by making them more situationally aware. Any person is a potential target, either from a criminal or a terrorist threat, depending on the environment you live and work in, and driving is the most important part of a person's security program. By raising situational awareness, increasing knowledge of the attack cycle, and outlining the nature of threats, the book can transform any reader from a soft target to an informed hard target who threat actors will want to avoid.

CRC Press

**Market:** Terrorism/Personal Security

August 2021: 7 x 10: 166pp

Hb: 978-0-367-55552-8: **£120.00**

Pb: 978-1-032-06562-5: **£46.99**

eBook: 978-1-003-09396-1

\* For full contents and more information, visit: [www.routledge.com/9780367555528](http://www.routledge.com/9780367555528)



2nd Edition

## The Basics of Investigating Forensic Science

A Laboratory Manual



Kathy Mirakovits, Portage Northern High School, Michigan, USA and Gina Londino-Smolar

The Basics of Investigating Forensic Science: A Laboratory Manual, Second Edition presents foundational concepts in forensic science through hands-on laboratory techniques and engaging exercises. The text offers numerous lab projects on a range of subjects including fingerprinting, shoeprint analysis, firearms, pathology, anthropology, forensic biology and DNA, drugs, trace evidence analysis, and more.

CRC Press

**Market:** Forensic Science/Criminal Justice

July 2021: 8.25 x 11: 218pp

Hb: 978-0-367-25153-6: **£100.00**

Pb: 978-0-367-25152-9: **£34.99**

eBook: 978-1-003-18485-0

\* For full contents and more information, visit: [www.routledge.com/9780367251536](http://www.routledge.com/9780367251536)





## A Monograph on Whiteflies



N.S. Butter, Punjab Agricultural University, India and A.K. Dhawan, Punjab Agricultural University, India

In all, 1550 species of whiteflies have been identified. The rapid spread of *Bemisia tabaci* has occurred throughout the globe and are regarded as the most notorious species. It is complex species known to contain biotypes namely, New World (Biotype -A), B-biotype MEAM1 (Biotype-B or Bemisia argentifolii, and MED (Biotype-Q) depending upon the geographical location. The complete information on the bio-ecology of important species along with the feeding mechanism has been presented in this book.

CRC Press

Market: Zoology

October 2021: 6.14 x 9.21: 236pp

Hb: 978-0-367-55903-8: £90.00

eBook: 978-1-003-09566-8

\* For full contents and more information, visit: [www.routledge.com/9780367559038](http://www.routledge.com/9780367559038)

## A Pocket Guide to Scientific Writing in Aquaculture Research



Rodrigue Yossa, WorldFish HQ

Writing a high-quality scientific aquaculture publication is challenging, and many students and early career aquaculture scientists find the task daunting. Yossa provides new researchers with all the tools they need to write abstracts and a variety of articles (peer-reviewed, technical, magazines, working papers, scientific reports and more). He talks the reader step-by-step through the process of reviewing submitted manuscripts and replying to reviewers, and understanding research ethics. Each section is accompanied by examples, offering a lifeline to aquaculture students and early career academics getting to grips with the basics.

CRC Press

Market: Aquaculture / Science

November 2021: 5.06 x 7.81: 120pp

Hb: 978-0-367-33888-6: £44.99

Pb: 978-0-367-33887-9: £16.99

eBook: 978-0-429-32264-8

\* For full contents and more information, visit: [www.routledge.com/9780367338886](http://www.routledge.com/9780367338886)

## Advances in Animal Disease Diagnosis



Edited by Suresh Kumar Gahlawat, Ch. Devi Lal University, India and Sushila Maan, Department of Animal Biotechnology, Lala Lajpat Rai University of Vety. and Animal Sciences (LUVAS), India

Infectious animal diseases caused by pathogenic microorganisms such as bacteria, fungi and viruses threaten the health and well-being of wildlife, livestock, and human populations, limit productivity and increase significantly economic losses to each sector. Pathogen detection is an important step for the diagnostics, successful treatment of animal diseases and control management in farms and field conditions.

This book will explore some key opportunities in the context of animal health, such as the detection of new microorganisms and development of the improved diagnosis of emerging or re-emerging diseases and other clinical conditions viz. biosensors, nanotools and omics technologies.

CRC Press

Market: Life Science

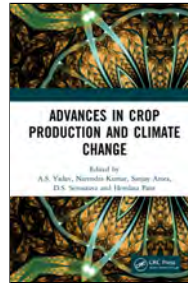
June 2021: 7 x 10: 336pp

Hb: 978-0-367-53051-8: £105.00

eBook: 978-1-003-08028-2

\* For full contents and more information, visit: [www.routledge.com/9780367530518](http://www.routledge.com/9780367530518)

## Advances in Crop Production and Climate Change



Edited by A.S. Yadav, Narendra Kumar, Sanjay Arora, D.S. Srivastava and Hemlata Pant

This book has comprehensive coverage and advances in agriculture for sustainable development. Contents in the book are organized in 18 chapters, which includes advances in production technologies of crops e.g. rice, wheat, barley, maize, pearl millet, pulses and oilseeds; sugarcane; soil biodiversity; farm mechanization etc. The book provides cutting edge scientific knowledge as well as solid background information on the challenges facing the global agricultural production systems. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with New India Publishing Agency.

CRC Press

Market: Agriculture

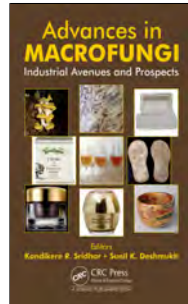
June 2021: 6 x 9: 506pp

Hb: 978-1-032-02429-5: £170.00

\* For full contents and more information, visit: [www.routledge.com/9781032024295](http://www.routledge.com/9781032024295)

## Advances in Macrofungi

Industrial Avenues and Prospects



Edited by Kandikere R. Sridhar, Mangalore University, India and Sunil K. Deshmukh

Series: Progress in Mycological Research

Large scale cultivation of macrofungi is possible with fermentation, using easily accessible lignocellulosic agricultural residues utilising economical methods to generate substantial biomass, food and biofuels. Bioconversion of lignocellulosic wastes by macrofungi generates value-added fungal nutritional biomass for humans and livestock. Besides commercial cultivation techniques, other topics covered include healing potential of mushrooms, industrial opportunities, mycelium-based products, forest wild mushrooms and industrial applications of white rot fungi. The book highlights importance of macrofungi and emphasises avenues and industrial

applications.

CRC Press

Market: Mycology

September 2021: 6.14 x 9.21: 374pp

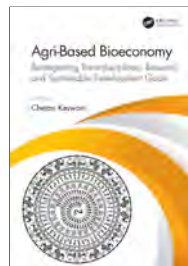
Hb: 978-0-367-56205-2: £155.00

eBook: 978-1-003-09681-8

\* For full contents and more information, visit: [www.routledge.com/9780367562052](http://www.routledge.com/9780367562052)

## Agri-Based Bioeconomy

Reintegrating Trans-disciplinary Research and Sustainable Development Goals



Edited by Chetan Keswani, Institute of Science, Banaras Hindu University, India

This volume concentrates on the recent scientific advancements in agricultural biotechnology and reintegrates it with socio-economic, industrial and intellectual property aspects of agricultural biotechnology and its implications for accomplishing the sustainable development goals. Adopting a unique approach, this book amalgamates science and business for an insider's viewpoint on the agro-biotech industry thereby laying the foundations for students and professionals alike.

CRC Press

Market: AGRICULTURAL SCIENCES

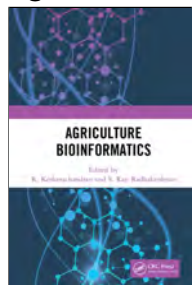
May 2021: 7 x 10: 330pp

Hb: 978-0-367-47100-2: £115.00

eBook: 978-1-003-03339-4

\* For full contents and more information, visit: [www.routledge.com/9780367471002](http://www.routledge.com/9780367471002)

## Agriculture Bioinformatics

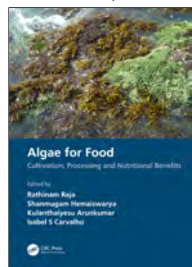


Edited by **R. Keshavachandran** and **S. Raji Radhakrishnan**  
This book is a compilation of 17 information packed chapters authored by working scientists in the respective discipline. In addition to the theoretical information, practical and applied aspects to boost productivity and quality of crops are also given. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with NIPA.

CRC Press  
**Market:** Bioinformatics  
June 2021: 6 x 9: 442pp  
Hb: 978-1-032-02458-5: **£170.00**  
\* For full contents and more information, visit: [www.routledge.com/9781032024585](http://www.routledge.com/9781032024585)

## Algae for Food

Cultivation, Processing and Nutritional Benefits



Edited by **Rathinam Raja**, University of Algarve, Portugal, **Shanmugam Hemaiswarya Arunkumar**, Central University of Kerala, India and **Isabel S Carvalho**, University of Algarve, Portugal

Algae are a primitive living photosynthetic form and they are the oldest living organism. In the marine ecosystem, algae are the primary producers that supplies energy required to a diverse marine organisms and especially seaweed provide habitat for invertebrates and fishes. There have been significant advances in many areas of phycoogy. This book describes the advances related to food and nutrition of algae achieved in the last decades, also identifies gaps in the present knowledge and

needs for future.

CRC Press  
**Market:** Life Sciences  
October 2021: 7 x 10: 312pp  
Hb: 978-0-367-76208-7: **£90.00**  
eBook: 978-1-003-16594-1  
\* For full contents and more information, visit: [www.routledge.com/9780367762087](http://www.routledge.com/9780367762087)

2nd Edition

## Ancient Seas of Southern Florida

The Geology and Paleontology of the Everglades Region



Edited by **Edward J. Petuch** and **David P. Berschauer**

Painting a complete picture of the geology, paleontology, and paleoceanography of the Everglades, this new edition offers new full color photographs of exposed geologic sections, stratotype localities, collection sites, and details of interesting fossil beds. The authors illustrate almost 800 of the most important and diagnostic stratigraphic index fossils found in these beds, including over 50 species of corals and almost 700 species of mollusks. Thoroughly updating *The Geology of the Everglades and Adjacent Areas*, it includes new updated geological data and concepts, and an expanded iconography of stratigraphic index fossils.

CRC Press  
**Market:** Geology  
August 2021: 8.25 x 11: 284pp  
Hb: 978-0-367-56633-3: **£120.00**  
eBook: 978-1-003-20594-4  
\* For full contents and more information, visit: [www.routledge.com/9780367566333](http://www.routledge.com/9780367566333)



## Basics of Wildlife Health Care and Management



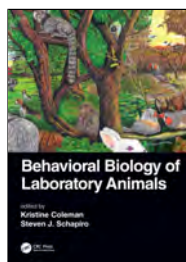
**Rajesh Jani**

The book provides basic understanding of the various topics of wildlife which will be useful for biologist, zoologist, veterinarians working in forest, zoos or at field level where they use to get wild animals for post mortem or for treatment. It also provides helpful information to the forest officers, zoo managers and protected area managers for critical care management and for doing needful things before approaching a veterinarian to save the life of animal or to collect biological material useful for diagnosis.

Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press  
**Market:** Wildlife Science  
June 2021: 6.85 x 9.69: 388pp  
Hb: 978-1-032-06528-1: **£89.99**  
eBook: 978-1-003-20269-1  
\* For full contents and more information, visit: [www.routledge.com/9781032065281](http://www.routledge.com/9781032065281)

## Behavioral Biology of Laboratory Animals



Edited by **Kristine Coleman**, OR National Primate Research Cntr. USA and **Steven J. Schapiro**, The University of TX MD Anderson Cancer Cntr.

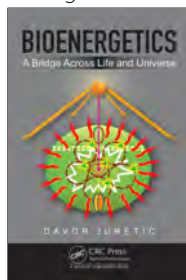
This 30-chapter volume informs students and professionals about the behavioral biology of animals commonly housed in laboratory and other captive settings. Each species evolved under specific environmental conditions, resulting in unique behavioral patterns, many of which are maintained in captivity even after generations of breeding. Understanding natural behavior is therefore a critical part of modern animal care practices. The descriptions, data, guidance, resources, and recommendations in this book will help the reader understand

their animals better, refine the care and treatment that they receive, and improve their well-being, welfare, and wellness.

CRC Press  
**Market:** Life Science  
September 2021: 8.25 x 11: 560pp  
Hb: 978-0-367-02923-4: **£170.00**  
eBook: 978-0-429-01951-7  
\* For full contents and more information, visit: [www.routledge.com/9780367029234](http://www.routledge.com/9780367029234)

## Bioenergetics

A Bridge Across Life and Universe



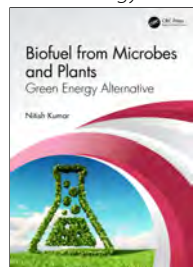
**Davor Juretic**

Bioenergetics deals with the very first energy transformation steps performed by living cells. Increased dissipation is the major effect of processing external energy packages. Enzyme-supported charge separation is the minor but essential outcome for maintaining life. These two events run together as driving-driven processes. The book explores the usefulness of dissecting the entropy production of enzymes involved in cellular defenses, fermentation, respiration, and photosynthesis, assuming that tightly regulated dissipation is the hallmark of life.

CRC Press  
**Market:** Physics  
August 2021: 7 x 10: 312pp  
Hb: 978-0-815-38838-8: **£155.00**  
eBook: 978-1-351-17276-9  
\* For full contents and more information, visit: [www.routledge.com/9780815388388](http://www.routledge.com/9780815388388)

## Biofuel from Microbes and Plants

Green Energy Alternative



Edited by **Nitish Kumar**, Central University of South Bihar, India

Global concern for energy security and environmental protection has put great emphasis on the search for alternative energy sources, particularly for the transport sector. Biofuels have emerged as a highly promising source of alternative energy, and have drawn global R&D for their production using biomass. There has also been concern in growing economies regarding energy security. Biofuels offer much promise on these frontiers. In addition to the above, they also have a reduced environmental impact in comparison to fossil fuels. Biofuels provides state-of-the-art information on the status of biofuel production

and related aspects.

CRC Press

**Market:** Agricultural Science

October 2021: 7 x 10: 352pp

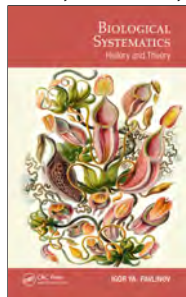
Hb: 978-0-367-20705-2: **£110.00**

eBook: 978-0-429-26297-5

\* For full contents and more information, visit: [www.routledge.com/9780367207052](http://www.routledge.com/9780367207052)

## Biological Systematics

History and Theory



Igor Ya. Pavlinov

*Series: Species and Systematics*

This book presents the theoretical foundations of the biological systematics. The history, structure and main tasks of systematics are summarized. The conceptual history and the succession of ideas are characterized. Briefly reviewed are the philosophical foundations of systematics and the structure and content of taxonomic theories. Most systematics research programs are outlined and the principal "scientific puzzles" are analyzed. The book is intended for professional taxonomists, students, and those interested in the history and theory of systematics and its role in the natural sciences.

CRC Press

**Market:** Evolutionary Biology

March 2021: 6.14 x 9.21: 270pp

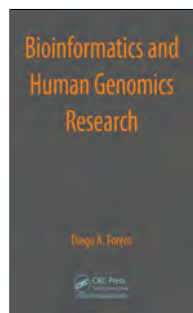
Hb: 978-0-367-65445-0: **£89.99**

eBook: 978-1-003-13017-8

\* For full contents and more information, visit: [www.routledge.com/9780367654450](http://www.routledge.com/9780367654450)



## Bioinformatics and Human Genomics Research



Edited by **Diego A. Forero**, Universidad Antonio Nariño, Cundinamarca, Columbia

The book *Bioinformatics and Human Genomics Research* provides up to date and comprehensive information about multiple approaches of bioinformatic tools in research in human genomics. Experts, from around the worlds of the applications in bioinformatics and human genomics have contributed chapters in the book.

CRC Press

**Market:** Bioinformatics

August 2021: 7 x 10: 290pp

Hb: 978-0-367-43760-2: **£148.00**

eBook: 978-1-003-00592-6

\* For full contents and more information, visit: [www.routledge.com/9780367437602](http://www.routledge.com/9780367437602)

## Biotechnological Approaches to Enhance Plant Secondary Metabolites

Recent Trends and Future Prospects

Edited by **Mohd. Shahnawaz**, CSIR-INDIAN INSTITUTE OF INTEGRATIVE MEDICINE, JAMMU AND KASHMIR

Thousands of secondary metabolites are produced by the plants to withstand under unfavourable environmental conditions and are reported commercially important molecules for nutraceutical, agro, cosmetic and pharmaceutical industries etc. *Biotechnological approaches to enhance plant secondary metabolites: recent trends and future prospects* provide a comprehensive introduction and review of state-of-the-art of biotechnological tools in this field of research at global level. The methodologies are highlighted by real data examples at both *in vitro* and *in vivo* level studies.

CRC Press

**Market:** Biomedical Science

November 2021: 7 x 10: 200pp

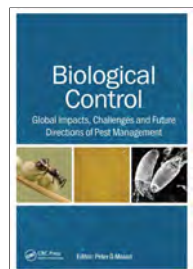
Hb: 978-0-367-47336-5: **£120.00**

eBook: 978-1-003-03495-7

\* For full contents and more information, visit: [www.routledge.com/9780367473365](http://www.routledge.com/9780367473365)

## Biological Control

A Global Endeavour



Edited by **Peter Mason**

This is the first book to bring together a comprehensive account of global activities in biological control, providing a global overview of biological control programs with information from introduction biological control, conservation biological control, and augmentative biological control (including commercial use). It provides a record of the organisms and main strategies used in biological control, key challenges confronting biological control today, the main socioeconomic challenges that need to be addressed, biological control efforts around the globe and highlights important successes and failures, suggestions to move biological control forward.

CRC Press

**Market:** Life Science

September 2021: 644pp

Hb: 978-1-032-10927-5: **£120.00**

\* For full contents and more information, visit: [www.routledge.com/9781032109275](http://www.routledge.com/9781032109275)

## Buckwheat: Forgotten Crop for the Future

Issues and Challenges



Edited by **Tanveer Bilal Pirzadah**, Department of Bioresources, University of Kashmir, India and **Reiaz Ul Rehman**, Department of Bioresources, University of Kashmir, India

Buckwheat: Forgotten crop for the Future offers an overview of this globally important crop, including its history, origin and its importance to functional food sector. The book also provides upto date information on the abiotic stress tolerance properties of the crop including its hyperaccumulating potential. The book talks about the issues and challenges being faced for adopting this crop and the ways to address and overcome these limitations. The book guides the readers through different varietal adaptations and provides information on appropriate research directions.

CRC Press

**Market:** Agriculture Science

July 2021: 6 x 9: 128pp

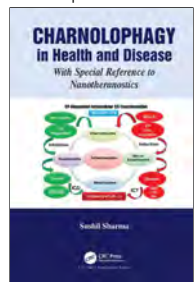
Hb: 978-0-367-54388-4: **£90.00**

eBook: 978-1-003-08910-0

\* For full contents and more information, visit: [www.routledge.com/9780367543884](http://www.routledge.com/9780367543884)

## Charnolophagy in Health and Disease

With Special Reference to Nanotheranostics



Sushil Sharma, American International school of Medicine, Guyana

"Charnolophagy" is a targeted, safe, and effective personalized theranostics of NDDs, CVDs, MDR malignancies, pain, inflammation, and infectious diseases. Based on experimental evidence; physiological, pharmacological, and pathological charnolophagy are proposed. Although, physiological charnolophagy can be controlled by diet, exercise, antioxidants, and life-style modifications; and pharmacological charnolophagy by currently-available pharmaceuticals; prevention of pathological charnolophagy will require novel charnolopharmacotherapeutics for interactable diseases.

CRC Press

Market: Biological Sciences

September 2021: 7 x 10: 608pp

Hb: 978-0-367-40790-2: £170.00

eBook: 978-0-367-80909-6

\* For full contents and more information, visit: [www.routledge.com/9780367407902](http://www.routledge.com/9780367407902)

## Crop Improvement

Biotechnological Advances



Edited by Pankaj Kumar, CSIR-IHBT Palampur, India and Ajay Kumar Thakur, ICAR-DRMR, India

The field of biotechnology is advancing at a faster pace. The availability of low-cost DNA/genome sequencing technologies has led to the discovery and functional characterization of myriad of genes imparting stress tolerance and quality traits. 'OMICS' group of technologies including Genomics, Proteomics, Transcriptomics and Metabolomics has revolutionized the agricultural biotechnology sector. The Nobel Prize winning technology i.e. Genome Editing technique is being employed to edit various gene functions in plants aiding in crop improvement.

CRC Press

Market: Biomedical Science

June 2021: 7 x 10: 270pp

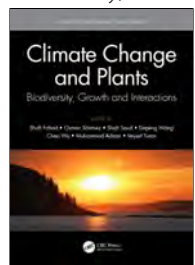
Hb: 978-0-367-56709-5: £90.00

eBook: 978-1-003-09907-9

\* For full contents and more information, visit: [www.routledge.com/9780367567095](http://www.routledge.com/9780367567095)

## Climate Change and Plants

Biodiversity, Growth and Interactions



Edited by Shah Fahad, Osman Sonmez, Shah Saud, Depeng Wang, Chao Wu, Muhammad Adnan and Veysel Turan

Series: *Footprints of Climate Variability on Plant Diversity*

Evidence raises every day of the varying climate and its impression on both plants and animals. Climatic changes influence all the agriculture factors, which can potentially adversely affect their productivity. Plant activities are intimately associated to climate and concentration of atmospheric carbon dioxide. The book *Climate change and Plants Interactions: Complexities and Surprise* examines how plant growth characters influences/influenced by the climate change both in past and present scenarios. The book cover papers present the

cutting-edge research in key determinates of plant growth in response to atmospheric CO<sub>2</sub> enhancement and global warming.

CRC Press

Market: Agricultural Science

May 2021: 7 x 10: 226pp

Hb: 978-0-367-62327-2: £125.00

eBook: 978-1-003-10893-1

\* For full contents and more information, visit: [www.routledge.com/9780367623272](http://www.routledge.com/9780367623272)

## Cultivation of Fruit Trees for Enhanced Climate Change Resilience

Edited by Adel Ahmed Abul-Soad, Chief Researcher, Tropical Fruit Research Dept. Horticulture Research Institute, Agricultural Research Center, Giza, Egypt and Jameel M. Al-Khayri, Department of Agricultural Biotechnology, King Faisal University, College of Agriculture and Food Sciences, Saudi Arabia

This book focuses on various fruit species management for climate change, including mitigation strategies and technological countermeasures taken by researchers, progressive growers and commercial companies to overcome adverse changes. It can be considered a unique source that emphasizes the fruit species individually, and not by the usual subject, enabling readers to reach directly to their crop of interest. The content includes genetic resources conservation, remote sensing and environmental certification. Increasing attention of the society toward information and measures taken by various stakeholders about climate change risks and threats makes this book very timely.

CRC Press

Market: Agricultural Science

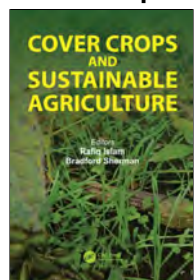
October 2021: 235 x 156: 250pp

Hb: 978-0-367-15189-8: £141.00

eBook: 978-0-429-05558-4

\* For full contents and more information, visit: [www.routledge.com/9780367151898](http://www.routledge.com/9780367151898)

## Cover Crops and Sustainable Agriculture



Edited by Rafiq Islam, Ohio State University, Piketon, USA and Bradford Sherman, Ohio State University, Piketon, USA

This book will not serve as the "encyclopedia of cover crop management," but it's close. The economic and environmental benefits of individual cover crops and blends/mixes for specific agronomic crop rotations and geographic locations are included. Photographs and illustrations show how cover crops look in the field, both above and below ground. The book includes details on the "hows" for successful cover cropping: how to choose cover crops for specific situations; how to plant; and how to terminate. As part of a continuous no-till system, cover crops provide long-term soil benefits and an economic return through higher yields.

CRC Press

Market: AGRICULTURAL SCIENCES

June 2021: 7 x 10: 326pp

Hb: 978-1-032-03440-9: £140.00

eBook: 978-1-003-18730-1

\* For full contents and more information, visit: [www.routledge.com/9781032034409](http://www.routledge.com/9781032034409)

## Dalbergia sissoo

Biology, Ecology and Sustainable Agroforestry



Edited by Siddra Ijaz, Centre of Agricultural Biochemistry and Biotechnology, Pakistan and Imran Ul Haq, University of Agriculture Faisalabad, Pakistan

*Dalbergia sissoo* (Shisham) is a perennial tree species native to the Asian subcontinent. It is an economically significant tree for its value in forestry, agroforestry, and horticulture. The high-quality timber imparts this tree species a significant commercial value. Besides valuable timber, it also exhibits medicinal, industrial, and agroforestry allied attributes. This tree has been introducing to the geographical regions where it does not exist naturally, which indicates its significant properties, getting diverse communities' attention. This book provides

information about this tree species based on the latest research trends and development on the subject.

CRC Press

Market: Life Science

July 2021: 7 x 10: 206pp

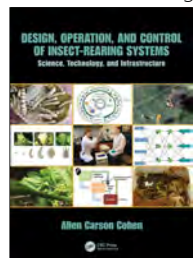
Hb: 978-1-032-00819-6: £140.00

eBook: 978-1-003-17594-0

\* For full contents and more information, visit: [www.routledge.com/9781032008196](http://www.routledge.com/9781032008196)

## Design, Operation, and Control of Insect-Rearing Systems

Science, Technology, and Infrastructure



**Allen Carson Cohen**, Department of Entomology and Plant Pathology, North Carolina State University, USA

Insect rearing serves a wide array of purposes including research, pest control by sterile insect technique and biological control, production of insects for food for other animals, conservation, education, and even far-reaching technology where insects are used to produce products such as pharmaceutical materials and strong, multipurpose textiles. This book explains the fundamental components of insect rearing: 1) the rearing systems per se, 2) personnel, 3) education of rearing personnel, 4) communication of procedures, 5) facilities where rearing is conducted, and 6) funding for all these components.

CRC Press

**Market:** Life Science

June 2021: 8.25 x 11: 420pp

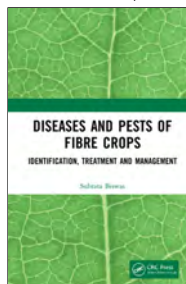
Hb: 978-1-138-57125-9: **£150.00**

eBook: 978-0-203-70295-6

\* For full contents and more information, visit: [www.routledge.com/9781138571259](http://www.routledge.com/9781138571259)

## Diseases and Pests of Fibre Crops

Identification, Treatment and Management



**Subrata Biswas**

This book presents a comprehensive knowledge on the diseases and pests of fibre crops, causing economic damage. It covers major disease and pest damages with the methods to combat them in fibre crop cultivations. This book is written in eight major chapters, each representing a certain type fibre crop. This is a reference book which is intended to provide research personnel a means to acquire deeper knowledge on diseases and pests of nine major fibre crops, viz., cotton, jute, kenaf, roselle, sunnhemp, sisal, ramie, flax and hemp.; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with NIPA.

CRC Press

**Market:** Plant Pathology

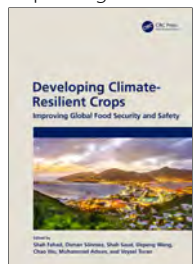
June 2021: 6 x 9: 700pp

Hb: 978-1-032-02459-2: **£170.00**

\* For full contents and more information, visit: [www.routledge.com/9781032024592](http://www.routledge.com/9781032024592)

## Developing Climate-Resilient Crops

Improving Global Food Security and Safety



Edited by **Shah Fahad, Osman Sonmez, Shah Saud, Depeng Wang, Chao Wu, Muhammad Adnan and Veysel Turan**

*Series: Footprints of Climate Variability on Plant Diversity*

Developing Climate Resilient Crops; A window for improving global food security and safety project is timely, as the world is gradually waking up to the fact that a global food crisis of enormous proportions is brewing. Climate change is creating immense problems for the agricultural productivity worldwide, resulting in higher food prices. This book elucidates the causative aspects of climate modification related to agriculture, soil and plants, and discusses the relevant resulting mitigation process and also how new tools and resources can be used to develop

climate resilient crops .

CRC Press

**Market:** Agriculture Science

June 2021: 7 x 10: 254pp

Hb: 978-0-367-62347-0: **£125.00**

eBook: 978-1-003-10903-7

\* For full contents and more information, visit: [www.routledge.com/9780367623470](http://www.routledge.com/9780367623470)

## Engineering Tolerance in Crop Plants Against Abiotic Stress

Edited by **Shah Fahad, Osman Sönmez, Shah Saud, Depeng Wang, Chao Wu, Muhammad Adnan, Muhammad Arif, The University of Agriculture, Pakistan and Amanullah, The University of Agriculture, Pakistan**

*Series: Footprints of Climate Variability on Plant Diversity*

Despite significant progress in increasing agricultural production, meeting the changing dietary preferences and increasing food demands of future populations remain significant challenges. Salinity, drought, water logging, high temperature and toxicity are those abiotic stresses that affect the crop yield and production. Tolerance for stress is a difficult operation that the plant needs to undergo in order to survive. In this book, we have discussed the stresses, their impact on crops and portrayed distinctive abiotic stress tolerant in response to different techniques that can improve the performance of the crops.

CRC Press

**Market:** Agriculture Science

October 2021: 7 x 10: 336pp

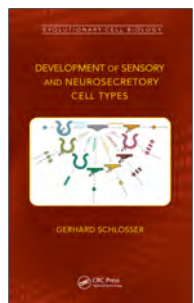
Hb: 978-0-367-75009-1: **£89.99**

eBook: 978-1-003-16071-7

\* For full contents and more information, visit: [www.routledge.com/9780367750091](http://www.routledge.com/9780367750091)

## Development of Sensory and Neurosecretory Cell Types

Vertebrate Cranial Placodes, volume 1



**Gerhard Schlosser**

*Series: Evolutionary Cell Biology*

Most of the cranial sense organs of vertebrates arise from embryonic structures known as cranial placodes. This book focuses on the development of sensory and neurosecretory cell types from cranial placodes by introducing the vertebrate head with its sense organs and neurosecretory organs and providing an overview of the various cranial placodes and their derivatives. Schlosser discusses how these primordia are established in the early embryo, how individual placodes develop, and how various placodally derived sensory and neurosecretory cell types differentiate into discrete structures.

CRC Press

**Market:** Life Science

June 2021: 6.14 x 9.21: 294pp

Hb: 978-1-138-06146-0: **£110.00**

eBook: 978-1-315-16231-7

\* For full contents and more information, visit: [www.routledge.com/9781138061460](http://www.routledge.com/9781138061460)

## Environmental Damage to DNA and the Protective Effects of Phytochemicals



**Bechan Sharma and Nitika Singh**

Environmental damage to DNA and the protective effects of phytochemicals provides information on the toxicity of natural as well as synthetic chemicals in the living systems leading to DNA damage and emergence of serious consequences or manifestations causing varied health hazards. In addition, the book containing a total of ten chapters reflects on to the possible applications of plants or plant extracts imparting protection of the living cells from the xenobiotics mediated DNA damage.

CRC Press

**Market:** Life Science

August 2021: 5.5 x 8.5: 136pp

Hb: 978-0-367-35822-8: **£44.99**

eBook: 978-0-429-34205-9

\* For full contents and more information, visit: [www.routledge.com/9780367358228](http://www.routledge.com/9780367358228)

## Enzymology of Complex Alpha-Glucans



Edited by Felix Nitschke

Glycogen and Starch: So Similar, yet so Different. Both carbohydrates are central to the primary metabolism of a large part of the living kingdom. Generally, animals, fungi, bacteria store glycogen, while plants largely rely on starch. This volume provides a broad and current views on both glycogen and starch, in lower and higher organisms. Beside biochemistry, physiology and regulation of glycogen and starch metabolism the reader can expect an insight into glycogen storage diseases and select methods and relevant techniques.

CRC Press

Market: Life Science

July 2021: 7 x 10: 298pp

Hb: 978-1-138-50520-9: £145.00

eBook: 978-1-315-14644-7

\* For full contents and more information, visit: [www.routledge.com/9781138505209](http://www.routledge.com/9781138505209)

## Evolutionary Cell Processes in Primates

Two Volume Set



Edited by M. Kathleen Pitirri and Joan T. Richtsmeier

Series: *Evolutionary Cell Biology*

These two volumes demonstrate the role of cellular mechanisms in the production of the many specialized traits defining primates. By exploring gene activity transforming into evolutionary change through the work of cellular mechanisms, the goal is to encourage others to adopt evolutionary cell biology as an approach to the genotype-phenotype map of the diversification of primates, human variation, and human evolution. Contributors highlight how genetic analysis, visualization of cells and tissues, and merging Evo-Devo with

evolutionary cell biology combine to answer questions central to understanding the human and primate evolution.

CRC Press

Market: Primatology

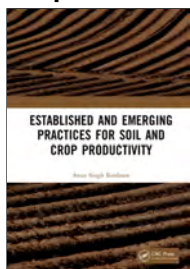
September 2021: 6.14 x 9.21: 522pp

Hb: 978-1-032-07355-2: £150.00

\* For full contents and more information, visit: [www.routledge.com/9781032073552](http://www.routledge.com/9781032073552)



## Established and Emerging Practices for Soil and Crop Productivity



Avtar Singh Bimbraw

The book explains the various existing, emerging and environmentally viable technologies for the sustainable and profitable crop productivity. The book also focusses on climate change, hurricanes and tropical storms, natural resources management, crop diversification, crop resource management, cropping systems, farming system, management of land use resources, conservation agriculture, crop residue management, renewable energy, precision agriculture, integrated nutrient management, integrated pest management. ; Note: T & F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

Market: Agriculture

June 2021: 6.85 x 9.69: 524pp

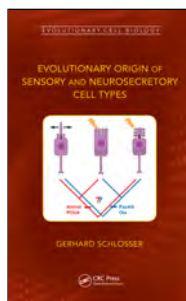
Hb: 978-1-032-06020-0: £170.00

eBook: 978-1-003-20034-5

\* For full contents and more information, visit: [www.routledge.com/9781032060200](http://www.routledge.com/9781032060200)

## Evolutionary Origin of Sensory and Neurosecretory Cell Types

Vertebrate Cranial Placodes, volume 2



Gerhard Schlosser

Series: *Evolutionary Cell Biology*

Most vertebrate cranial sense organs arise from placodes. These placodes give rise to sensory neurons that transmit information to the brain and neurosecretory cells. This book reviews the evolutionary origin of the sensory and neurosecretory cell types. It summarizes our current understanding of vertebrate evolution, clarifies conceptual issues relating to homology and evolutionary innovation of cell types, compares the sensory and neurosecretory cell types with similar cell types in other animals, and addresses the question of how cranial placodes evolved as novel structures in vertebrates by redeploying pre-existing and sometimes evolutionarily ancient cell types.

CRC Press

Market: Developmental Biology

June 2021: 6.14 x 9.21: 323pp

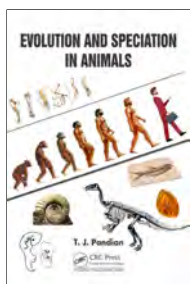
Hb: 978-0-367-74852-4: £120.00

eBook: 978-1-003-16062-5

\* For full contents and more information, visit: [www.routledge.com/9780367748524](http://www.routledge.com/9780367748524)



## Evolution and Speciation in Animals



T. J. Pandian, Madurai Kamaraj University, Tamilnadu, India

Of 1,543,196 species included in the Animal Kingdom, 97 % of them belong to the major phyla. Not surprisingly, the minor phyla are not as speciose (1,795 species/pylum) as major phyla (166,279 species/pylum) are. Hence, the relatively more motile major phyletics have evolved more toward species diversity, while the relatively low motile or sessile minor phyletics have gone for more phylum diversity. Interestingly, the non-motile plants and microbes have also moved toward strain/racial diversity within a species rather than species diversity.

CRC Press

Market: Biology

September 2021: 6.14 x 9.21: 346pp

Hb: 978-1-032-00919-3: £140.00

eBook: 978-1-003-17638-1

\* For full contents and more information, visit: [www.routledge.com/9781032009193](http://www.routledge.com/9781032009193)

## Extreme Environments

Unique Ecosystems – Amazing Microbes



Edited by Anita Pandey and Avinash Sharma

The book *Extreme Environments: Unique Ecosystems – Amazing Microbes* is an attempt to showcase the uniqueness of extremophiles, the largely unexplored group that has the abilities to function in hostile conditions and represent the very ancient life forms that thrived on earth billions of years ago. The book covers a wide range of research achievements in the field of microbiology of extreme environments right from the conventional approaches of cultivation to recently evolved high throughput sequencing technologies. The book provides a broad spectrum of information about the taxonomy, physiology, ecology and biotechnological applications of extremophiles.

CRC Press

Market: Statistics

June 2021: 7 x 10: 378pp

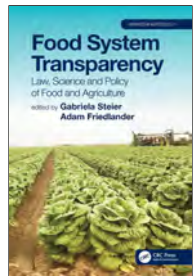
Hb: 978-0-367-35016-1: £148.00

eBook: 978-0-429-34345-2

\* For full contents and more information, visit: [www.routledge.com/9780367350161](http://www.routledge.com/9780367350161)

## Food System Transparency

Law, Science and Policy of Food and Agriculture



Edited by **Gabriela Steier**, Northeastern University, Boston, USA and **Adam Friedlander**

Series: *Advances in Agroecology*

This book brings together an international group of agriculture and food lawyers and scientists to define the field of *Food System Transparency*. Investigating social, economic, political, scientific and legal frameworks, the book addresses topics such as food authenticity, agroecological evaluations, and consumer protection. Interwoven themes of transparency contextualize concepts of food safety, information sharing and regulatory opportunities at a local and global scale. Important reading for graduate-level students, legal scholars, non-legal academics,

and advocates for food system transparency, resilience, agroecology and environmental conservation.

CRC Press

Market: Life Science

June 2021: 6.14 x 9.21: 244pp

Hb: 978-0-367-77412-7: **£132.99**

Pb: 978-0-367-44036-7: **£52.99**

eBook: 978-1-003-00755-5

\* For full contents and more information, visit: [www.routledge.com/9780367774127](http://www.routledge.com/9780367774127)

## Forest Insects in Europe

Diversity, Functions and Importance



Edited by **Beat Wermelinger**, Swiss Federal Institute WSL, Zurich, Switzerland

Forest insects play important roles ecologically and economically. They pollinate plants, decompose dead plant and animal tissue, provide food for vertebrates, regulate pest organisms, and shape entire landscapes. Some are considered pests, while others provide usable products. This book has been written for professional entomologists but also for nature lovers generally. The descriptions of the various roles insects play in forest ecosystems are intended to be easily comprehensible, but still scientific. The book is richly illustrated with 580

fascinating colour images of over 300 different insect and spider species.

CRC Press

Market: Entomology

July 2021: 6.85 x 9.69: 363pp

Hb: 978-1-032-03031-9: **£124.99**

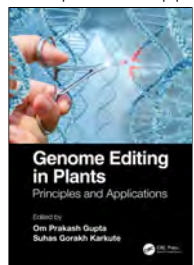
Pb: 978-0-367-45700-6: **£49.99**

eBook: 978-1-003-18646-5

\* For full contents and more information, visit: [www.routledge.com/9781032030319](http://www.routledge.com/9781032030319)

## Genome Editing in Plants

Principles and Applications



Edited by **Om Prakash Gupta** and **Suhas Gorakh Karkute**

Genome Editing in Plants: Principles and Applications address information of genome editing starting from principles and historical aspects to the latest advancements in the field. As genome editing technology has emerged as one of the cutting edge and very promising technologies, researchers around the globe have started producing original research outputs which have significantly improved our current understanding and potential of the technology. The initial chapters describe different genome editing tools, their principles and applications. Other chapters are dedicated to present status and future applications of genome editing techniques in various crop improvement

programs.

CRC Press

Market: Life Science

July 2021: 7 x 10: 272pp

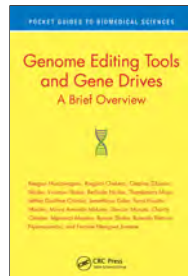
Hb: 978-0-367-41590-7: **£110.00**

eBook: 978-0-367-81537-0

\* For full contents and more information, visit: [www.routledge.com/9780367415907](http://www.routledge.com/9780367415907)

## Genome Editing Tools and Gene Drives

A Brief Overview



Edited by **Reagan Mudziwapasi**, Lupane State University, Zimbabwe, **Ringisai Chekera**, Lupane State University, Zimbabwe, **Clophas Zibusiso Ncube**, Irvonnine Shoko, **Berlinda Ncube**, **Thandanani Moyo**, **Jeffrey Godfrey Chimbo**, **Jemethious Dube**, **Farai Faustos Mashiri**, **Maira Amanda Mubani**, **Duncan Maruta**, **Charity Chimbo**, **Mpumuzi Masuku**, **Ryman Shoko**, **Rutendo Patricia Nyamusamba** and **Fortune Ntengwa Jomane**

Series: *Pocket Guides to Biomedical Sciences*

This book succinctly reviews and describes genome editing tools such as ZFNs, CRISPR, megaTALs and TALENs. It covers the history, principles, applications and the advantages and

disadvantages of each tool. The book is intended to provide an approachable and understandable outline enhancing science education in schools and universities by demystifying genome editing technologies. This book fills a gap between detailed descriptions and comprehensive reviews of conventional methods of genome editing and simpler and briefer cookbook descriptions of current tools of genome editing. It helps young scientists understand emerging genome editing tools and promotes related research.

CRC Press

Market: Biotechnology

October 2021: 152pp

Hb: 978-0-367-76066-3: **£94.99**

Pb: 978-0-367-74596-7: **£38.99**

eBook: 978-1-003-16531-6

\* For full contents and more information, visit: [www.routledge.com/9780367760663](http://www.routledge.com/9780367760663)

## Genus Rheum (Polygonaceae)

A Global Perspective

Edited by **Shahzad A. Pandith**, **Mohd. Ishfaq Khan** and **Salika Ramazan**

Genus Rheum (Polygonaceae): A global perspective provides an integrative overview of a genus of high valued medicinal herbs. It majorly emphasizes various aspects of research on Rheum from its origin to conservation. The book evaluates the concepts, definitions, models and findings involved in understanding its botany, ecology, chemistry, ethnobotany, pharmacology and molecular biology besides the employment of in vitro propagation strategies vis-à-vis threat status as a conservation measure.

CRC Press

Market: Life Science

August 2021: 6 x 9: 192pp

Hb: 978-0-367-35576-0: **£140.00**

eBook: 978-0-429-34039-0

\* For full contents and more information, visit: [www.routledge.com/9780367355760](http://www.routledge.com/9780367355760)

## Handbook of Marine Model Organisms in Experimental Biology

Established and Emerging

Edited by **Bernd Schierwater** and **Agnes Boutet**

While the importance of molecular approaches in the life sciences is unquestioned and the speed of technological progress in developing new methods is unprecedented, detailed description of anatomy and development and practical working knowledge of whole organism ecology and evolutionary history is prerequisite to a deeper understanding of biodiversity. Much of our biological and biomedical knowledge derives from studying marine model systems. In this new handbook world-leading experts describe the cutting-edge work and potential for their unique model system. This will be a gold mine for students and scientists from all fields of life sciences.

CRC Press

Market: Zoology

November 2021: 8.25 x 11: 464pp

Hb: 978-0-367-44447-1: **£188.00**

eBook: 978-1-003-21750-3

\* For full contents and more information, visit: [www.routledge.com/9780367444471](http://www.routledge.com/9780367444471)

4th Edition

**Handbook of Plant and Crop Physiology**

Edited by **Mohammad Pessaraki**, The University of Arizona, Tucson, USA

The new edition of this well-regarded handbook offers a unique, comprehensive, and complete collection of topics in the field of plant and crop physiology. Containing more than 90 percent new material, substantial revisions, and two new sections, this edition covers the physiology of plant and crop growth and development, cellular and molecular aspects, plant genetics and production processes.

CRC Press

**Market:** Crop Science

July 2021: 8.25 x 11: 1200pp

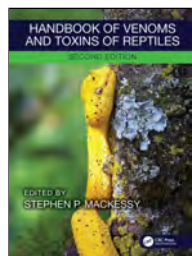
Hb: 978-0-367-55454-5: **£210.00**

eBook: 978-1-003-09364-0

Prev. Ed Hb: 978-1-466-55328-6

\* For full contents and more information, visit: [www.routledge.com/9780367554545](http://www.routledge.com/9780367554545)

2nd Edition

**Handbook of Venoms and Toxins of Reptiles**

Edited by **Stephen P. Mackessy**, University of Northern Colorado, Greeley, CO, USA

A decade after publication of the first edition, this handbook responds to extensive changes in the field of toxinology to endure as the most comprehensive review of reptile venoms on the market. The six sections of this new edition, which has nearly doubled in size, complement the original handbook by presenting current information from many of the leading researchers and physicians in toxinology, with topics ranging from functional morphology, evolution and ecology to crystallography, -omics technologies and more. The section on snakebite now includes several chapters dealing with the

problem broadly and with new technologies.

CRC Press

**Market:** Life Science

May 2021: 8.25 x 11: 680pp

Hb: 978-0-367-14974-1: **£150.00**

eBook: 978-0-429-05420-4

Prev. Ed Hb: 978-0-849-39165-1

\* For full contents and more information, visit: [www.routledge.com/9780367149741](http://www.routledge.com/9780367149741)**Harvest of Fish and Wildlife**

New Paradigms for Sustainable Management



Edited by **Kevin L. Pope** and **Larkin A. Powell**

*Harvest of Fish and Wildlife: New Paradigms for Sustainable Management* unites experts in wildlife and fishery sciences for an interdisciplinary overview of harvest management. This book presents unique insights for embracing the complete social-ecological system to ensure a sustainable future. It educates users on evolutionary and population dynamics; social and political influences; hunter and angler behavior; decision processes; impacts of regulations; and stakeholder involvement. This book appeals to population biologists, evolutionary biologists and social scientists. It is a key resource for on-the-ground managers and research scientists developing harvesting applications.

CRC Press

**Market:** Wildlife Science

June 2021: 7 x 10: 482pp

Hb: 978-0-367-43666-7: **£150.00**Pb: 978-1-032-00200-2: **£59.99**

eBook: 978-1-003-00905-4

\* For full contents and more information, visit: [www.routledge.com/9780367436667](http://www.routledge.com/9780367436667)**Health and Welfare of Brachycephalic (Flat-faced) Companion Animals**

A Complete Guide for Veterinary and Animal Professionals



Edited by **Rowena Packer**, The Royal Veterinary College and **Dan O'Neill**, The Royal Veterinary College

Health and welfare issues relating to brachycephalic (flat-faced) dogs are now one of the most pressing problems facing companion animals. This book aims to equip veterinary professionals, animal welfare scientists, dog breeders and the interested owner with the full story about brachycephalic health and welfare. Cutting-edge knowledge is provided on a range of disciplines including anaesthesia, ophthalmology, dermatology, respiratory disease, neurological, dental, reproduction and weight control. The book offers substantial practical advice for veterinary teams on welfare and ethical issues around choosing, owning and caring for brachycephalic dogs to share with clients.

CRC Press

**Market:** Veterinary Medicine

July 2021: 7 x 10: 416pp

Hb: 978-0-367-20741-0: **£88.99**

eBook: 978-0-429-26323-1

\* For full contents and more information, visit: [www.routledge.com/9780367207410](http://www.routledge.com/9780367207410)**Heavy Metal Toxicity in Plants**

Physiological and Molecular Adaptations

Edited by **Tariq Aftab** and **Khalid Rehman Hakeem**

This book highlights the various metal induced impacts on plants and adaptation strategies employed to avoid these stressful conditions. This comprehensive volume emphasizes on the recent updates about the current research on the heavy metal stress in plant biology covering different aspects related to challenges and opportunities in the concerned field. This book is an attempt to bring together researchers who have been engaged in the area of stress signaling, crosstalk and mechanisms of heavy metal stress and share their research findings.

CRC Press

**Market:** Life Science

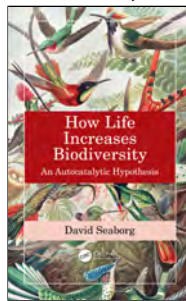
September 2021: 8.25 x 11: 288pp

Hb: 978-0-367-72507-5: **£120.00**

eBook: 978-1-003-15508-9

\* For full contents and more information, visit: [www.routledge.com/9780367725075](http://www.routledge.com/9780367725075)**How Life Increases Biodiversity**

An Autocatalytic Hypothesis



**David Seaborg**, Foundation for Biological Conservation and Research, Walnut Creek, California, USA

Life maximizes biodiversity; this is the hypothesis of this book. An atmosphere favorable for life, including high oxygen and the ozone layer, and favorable nitrogen and carbon dioxide levels stimulated increases in biodiversity. Symbiosis drives diversification and macroevolution; e.g. bacteria makes nitrogen available to plants. Ecosystems interact symbiotically. Horizontal gene transfer, often mediated by viruses, is common, drives major evolutionary transitions, and is "symbiotic evolution." These observations and others suggest that life has created a positive feedback loop stimulating biodiversity.

CRC Press

**Market:** Life Science

July 2021: 6.14 x 9.21: 304pp

Hb: 978-1-138-34140-1: **£150.00**

eBook: 978-0-429-44013-7

\* For full contents and more information, visit: [www.routledge.com/9781138341401](http://www.routledge.com/9781138341401)



## How Life is Different



Vitaly Shubin

The book examines basic principles of the structure and organization of living organisms and their differences from objects of inanimate nature. It is shown how a single program-information structure permeates all evolutionary stages of life, including the cell, multicellular organisms and humans. The author explains how this structure is arranged and how it functions, as well as the role of information system.

CRC Press

Market: Molecular Biology

June 2021: 6.14 x 9.21: 210pp

Hb: 978-0-367-77555-1: £150.00

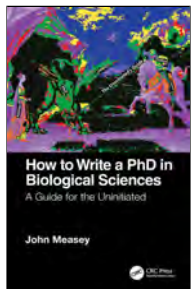
Pb: 978-0-367-77181-2: £42.99

eBook: 978-1-003-17189-8

\* For full contents and more information, visit: [www.routledge.com/9780367775551](http://www.routledge.com/9780367775551)

## How to Write a PhD in Biological Sciences

A Guide for the Uninitiated



John Measey

You don't *have* to be a genius to write a PhD. Of course, it will always involve a lot of hard work and dedication, but the process of writing up is a whole lot easier if you understand the basic ground rules. This book is a guide through the 'dos' and 'don'ts' of writing a PhD, specifically in the biological sciences. It will be your companion from the point when you decide to do a PhD, providing practical guidance to getting started, all the way through the nuts and bolts of the writing and editing process. It will also help you to get - and stay - in the right mental framework and establish good habits from the beginning, putting you in a commanding position later on.

CRC Press

Market: Study Guide

November 2021: 6.14 x 9.21: 310pp

Hb: 978-1-032-08021-5: £42.99

Pb: 978-1-032-08020-8: £16.99

eBook: 978-1-003-21256-0

\* For full contents and more information, visit: [www.routledge.com/9781032080215](http://www.routledge.com/9781032080215)

## Industrial Crops

Bioresources to Biotechnology

Aliyu Ahmad Warra, Federal University Gusau, Zamfara, Nigeria and Majeti Narasimha Vara Prasad, UNIV. OF HYDERABAD, Telangana, India

This book captures how genetically modified crops can be exploited for conventional agriculture and greener biopharming for pharmaceutical industries. The book covers how Innovative biotechnology can expand the markets for agricultural producers worldwide, reduce environmental degradation, and provide alternatives to fossil carbon-derived products and energy. Aspects of entrepreneurial biotechnology and bioprospecting was also covered.

CRC Press

Market: Science Publisher

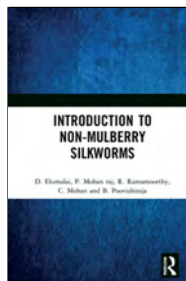
August 2021: 235 x 156: 350pp

Hb: 978-0-367-36046-7: £141.00

eBook: 978-0-429-34627-9

\* For full contents and more information, visit: [www.routledge.com/9780367360467](http://www.routledge.com/9780367360467)

## Introduction to Non-Mulberry Silkworms



D. Elumalai, P. Mohan raj, R. Ramamoorthy, C. Mohan and B. Poovizhiraja

This book will serve as a valuable source of information on the aspects of history, current scenario, non-mulberry cultivation, pruning, pests and diseases of eri, tasar and muga, silkworm rearing, pests and diseases of non-mulberry silkworm, processing of cocoon etc. This book can be used as resource material and practical guide for the students of agriculture, horticulture and sericulture.

Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

Market: Horticulture

May 2021: 6.14 x 9.21: 258pp

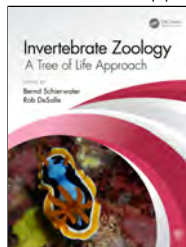
Hb: 978-1-032-05399-8: £89.99

eBook: 978-1-003-19739-3

\* For full contents and more information, visit: [www.routledge.com/9781032053998](http://www.routledge.com/9781032053998)

## Invertebrate Zoology

A Tree of Life Approach



Bernd Schierwater, ITZ, TiHo University, Hannover, Germany and Rob DeSalle, American Museum of Natural History, New York, USA

*Invertebrate Zoology: A Tree of Life Approach* is a comprehensive textbook adopting an explicitly phylogenetic organization. With the explosion of Next Generation Sequencing approaches, there has been a sea-change in the recognized phylogenetic relationships among and between invertebrate lineages. In addition, the merger of evolutionary and developmental biology (evo-devo) has dramatically contributed to changes in the understanding of invertebrate biology. Synthesizing these three

approaches (classical morphology, sequencing data, and evo-devo studies) offers students a unique perspective of invertebrate diversity.

CRC Press

Market: Life Science

July 2021: 8.25 x 11: 644pp

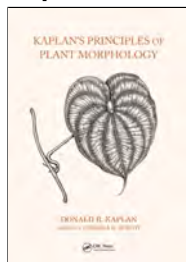
Hb: 978-1-482-23581-4: £99.99

Pb: 978-0-367-68567-6: £39.99

eBook: 978-0-429-15905-3

\* For full contents and more information, visit: [www.routledge.com/9781482235814](http://www.routledge.com/9781482235814)

## Kaplan's Principles of Plant Morphology



Donald Kaplan and Chelsea D. Specht

The principles of plant morphology are being brought into studies of crop development, biodiversity and evolution during climate change, and researchers are in need of a modern reference and textbook on the subject. This book defines the field of plant morphology, providing resources, examples and theoretical constructs that illuminate the foundations of plant morphology and clearly outline the importance of integrating a fundamental understanding of plant morphology into modern research in plant genetics, development and physiology.

CRC Press

Market: Life Science

September 2021: 8.25 x 11: 1330pp

Hb: 978-1-482-24519-6: £290.00

eBook: 978-1-482-24522-6

\* For full contents and more information, visit: [www.routledge.com/9781482245196](http://www.routledge.com/9781482245196)

## Making and Unmaking of San Diego Bay



Gary C. Howard, The Gladstone Institutes, San Francisco, California, USA and Matthew R. Kaser, Bell & Associates, San Francisco, California, USA

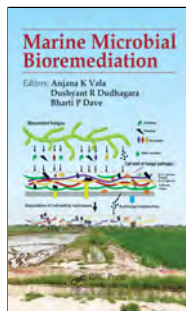
San Diego Bay is a shallow estuary surrounded by a large population center. The forces that built it began with plate tectonics and involved the movement along the San Andreas Fault. Changes in the climate resulting from the last ice age yielded lower and then higher sea levels. Human activity influenced the Bay. Dredging for military uses and industry have altered the Bay. Humans have also built several cities which now surround the Bay. This book describes the natural history and evolution of the San Diego Bay area over the last 20 million years through the present and into the future.

CRC Press

**Market:** Environmental Science  
September 2021: 6 x 9: 196pp  
Hb: 978-1-138-59676-4: **£92.00**  
Pb: 978-1-032-10244-3: **£45.99**  
eBook: 978-0-429-48746-0

\* For full contents and more information, visit: [www.routledge.com/9781138596764](http://www.routledge.com/9781138596764)

## Marine Microbial Bioremediation



Edited by Anjana Kiritsinh Vala, Dushyant R. Dudhagara, Bhakta Kavi Narsinh Mehta University, Gujarat, India and Bharti Dave, Indrashhil University, Gujarat, India

Increased industrialization and urbanization has polluted the marine environment, the largest ecosystem. Hence, sincere efforts must be made to decontaminate marine ecosystem for sustainable use of oceans and their bioresources. Microbial population in the marine environment plays a very crucial role in degrading, transforming and detoxifying the pollutants. This book presents contributions from leading scientists across the globe who have worked extensively on polluted marine ecosystem in removal of pollutants, mycoremediation of salinity ingressed soils, etc.

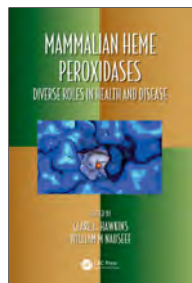
CRC Press

**Market:** Marine Science  
November 2021: 6.14 x 9.21: 264pp  
Hb: 978-0-367-42533-3: **£155.00**  
eBook: 978-1-003-00107-2

\* For full contents and more information, visit: [www.routledge.com/9780367425333](http://www.routledge.com/9780367425333)

## Mammalian Heme Peroxidases

Diverse Roles in Health and Disease



Edited by Clare Hawkins and William M Nauseef

Series: *Oxidative Stress and Disease*

Peroxidases, a protein family related to heme peroxidases, play a novel role in tissue biogenesis and matrix assembly, which are also attracting attention in different pathological contexts. This book highlights recent developments in our understanding of the chemistry, biochemistry and biological roles of mammalian peroxidases and their associated oxidants, their involvement in both innate immunity and chronic inflammatory disease in a variety of end organs, and potential therapeutic approaches to modulate and prevent damaging reactions.

CRC Press

**Market:** Biochemistry  
October 2021: 7 x 10: 376pp  
Hb: 978-0-367-82036-7: **£110.00**  
eBook: 978-1-003-21228-7

\* For full contents and more information, visit: [www.routledge.com/9780367820367](http://www.routledge.com/9780367820367)

## Microbial Diversity in Honeybees



Charles H. Wick and David A. Wick

Honeybees are an important link in our food chain because they are major pollinators of food crops. In recent years, honeybee populations have declined precipitously. This book contains new data on rich diversity of microbes as collected by honeybees. It is a must read for everyone concerned about the honeybee and working in the industry.

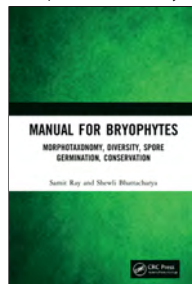
CRC Press

**Market:** Entomology  
May 2021: 6 x 9: 266pp  
Hb: 978-0-367-53938-2: **£99.99**  
eBook: 978-1-003-08380-1

\* For full contents and more information, visit: [www.routledge.com/9780367539382](http://www.routledge.com/9780367539382)

## Manual for Bryophytes

Morphotaxonomy, Diversity, Spore Germination, Conservation



Samit Ray and Shewli Bhattacharya

This book will enrich the readers theoretical knowledge about the fundamental aspects of bryology. It includes practical guidelines for collection and recording of bryophytes, methodologies for studying its morphology, morphometry and internal structure, modern approach to bryophytes systematics and characterization of genera, taxonomic importance of spore ornamentation as revealed by the Scanning Electron Microscopy, significance of bryophyte conservation and basic methods of in vitro study.

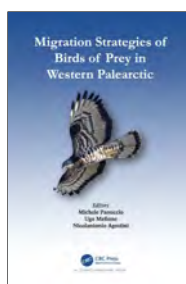
Please note: T&F does not sell or distribute the Hardback in South Asia.

CRC Press

**Market:** Botany  
August 2021: 6 x 9: 140pp  
Hb: 978-1-032-07694-2: **£89.99**  
eBook: 978-1-003-20837-2

\* For full contents and more information, visit: [www.routledge.com/9781032076942](http://www.routledge.com/9781032076942)

## Migration Strategies of Birds of Prey in Western Palearctic



Edited by Michele Panuccio, DSTA Department of Earth and Environmental Science, University of Pavia, Ugo Mellone and Nicolantonio Agostini

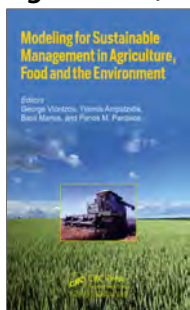
The book gives a complete overview of the migration ecology of Western Palearctic raptors. Across seasons and continents, with great navigation abilities and facing high mortality risks, these species move twice a year between their breeding and wintering sites. Morphology, behavioural adaptations and environment encountered *en route* have an impact in determining the migratory flyways of these top predators. Using a mixture of traditional methods and new technologies, this book resumes the results of the research carried out in the last decades.

CRC Press

**Market:** Life Science  
July 2021: 7 x 10: 320pp  
Hb: 978-1-138-49572-2: **£200.00**  
Pb: 978-0-367-76543-9: **£76.99**  
eBook: 978-1-351-02362-7

\* For full contents and more information, visit: [www.routledge.com/9781138495722](http://www.routledge.com/9781138495722)

## Modeling for Sustainable Management in Agriculture, Food and the Environment



Edited by **George Vlontzos**, Dep. of Agriculture Crop Production and Rural Development, University of Thessaly, Volos, GREECE, **Yiannis Ampatzidis**, Agricultural and Biological Engineering Department, University of Florida, Immokalee, Florida, USA, **Basil Manos**, Aristotle University of Thessaloniki, Greece and **Panos M. Pardalos**, Center for Applied Optimization, Uni. of FL

Modeling is widely utilized in agriculture, food, and environmental protection and management. The interrelationship of these sectors necessitates the need for methodologies and operational tools to increase the effectiveness and efficiency, establishing at the same time the sustainable utilization of inputs and natural resources. An integrated approach by a multidisciplinary team of researchers

is necessary. This book introduces the readers to relevant methodological approaches and applications, and outlines the challenges in the near future.

CRC Press

**Market:** Agricultural Science

September 2021: 6.14 x 9.21: 180pp

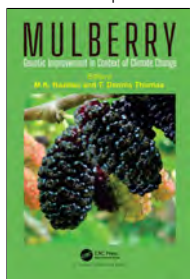
Hb: 978-0-367-18667-8: **£120.00**

eBook: 978-0-429-19752-9

\* For full contents and more information, visit: [www.routledge.com/9780367186678](http://www.routledge.com/9780367186678)

## Mulberry

Genetic Improvement in Context of Climate Change



Edited by **Maharaj Krishen Razdan**, Former Principal, Shyam Lal College, University of Delhi, Delhi, India Former, Member, Delhi University Academic Council, Delhi, India and **Dennis T. Thomas**, Department of Plant Science, Central University of Kerala, Kasaragod, India

Comprises the latest research findings of experts in mulberry (*Morus* spp.), an important plant in sericulture. It includes systematics, conservation of germplasm, methods of cultivation, conventional methods of genetic improvement like sexual breeding, polyploidy and mutation breeding, biochemical and phytochemical studies, application of non-conventional breeding techniques using tissue culture in haploid and triploid

plant production, somatic hybridization, and genetic transformation to improve quality and productivity as well as the development of stress tolerant adaptive traits in plants in context of global warming.

CRC Press

**Market:** Agricultural Science

July 2021: 7 x 10: 262pp

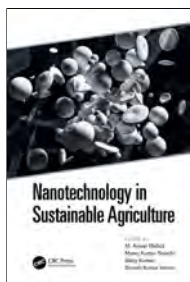
Hb: 978-0-367-02499-4: **£150.00**

Pb: 978-0-367-55534-4: **£57.99**

eBook: 978-0-429-39923-7

\* For full contents and more information, visit: [www.routledge.com/9780367024994](http://www.routledge.com/9780367024994)

## Nanotechnology in Sustainable Agriculture



Edited by **M. Anwar Mallick**, Vinoba Bhawe University, India, **Manoj K. Solanki**, Agricultural Research Organization, Israel, **Baby Kumari**, Vinoba Bhawe University, India and **Suresh Kumar Verma**, KIIT University, India

*Nanotechnology in Sustainable Agriculture* presents applications of nanobiotechnology for eco-friendly agriculture practices. Implementing sustainable agriculture techniques is a crucial component in meeting projected global food demands while minimising toxic waste in the environment. Nano-technological tools – including nanoparticles, nanocapsules, nanotubes and nanomolecules – offer sustainable options to modernise agriculture systems. Written by nanotechnology experts, this book outlines how nano-formulations can improve yield without

reliance on chemical pesticides and reduce nutrient losses in fertilization.

CRC Press

**Market:** Life Science

July 2021: 6.14 x 9.21: 402pp

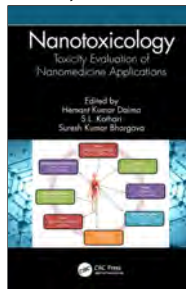
Hb: 978-0-367-36940-8: **£150.00**

eBook: 978-0-429-35200-3

\* For full contents and more information, visit: [www.routledge.com/9780367369408](http://www.routledge.com/9780367369408)

## Nanotoxicology

Toxicity Evaluation of Nanomedicine Applications



Edited by **Hemant Kumar Daima**, Amity University Rajasthan, India, **S. L. Kothari**, Amity University Rajasthan, India and **Bhargava Suresh Kumar**, RMIT University, Australia

This book addresses the existing gaps between nanomedicine and nanotoxicity and brings together the incomplete knowledge on advances toward safe-by-design nanomaterials and existing toxicity challenges.

It delivers comprehensive coverage in the field with fundamental understanding, serving as a platform to convey essential concepts of nanotoxicology and how these concepts can be employed to develop advanced nanomaterials for a range of biomedical applications. This book is an effort to answer some of the thoughtful nanotoxicological complications and their

auspicious probable solutions with new approaches and careful toxicity assessment.

CRC Press

**Market:** Toxicology

July 2021: 6 x 9: 494pp

Hb: 978-0-367-26647-9: **£155.00**

eBook: 978-0-429-29974-2

\* For full contents and more information, visit: [www.routledge.com/9780367266479](http://www.routledge.com/9780367266479)

## Neuron Signaling in Metabolic Regulation



Edited by **Qingchun Tong**, University of Texas Health Science Center, TX, USA

*Series: Methods in Signal Transduction Series*

This book focuses on neuron signaling in the regulation of metabolism and body weight and associated methods. In the recent years, progress has been made in identifying neurons, neural pathways, and non-neuron cells regulating feeding, as well as in delineating autonomic nervous systems targeting peripheral metabolic tissues in the regulation of energy expenditure and metabolism. This proposed book will cover recent progress on neuron signaling for body weight and metabolic regulation and the state-of-the-art methods that has been applied in this field. Readers will be exposed to latest

research frontiers on neuron regulation of metabolism.

CRC Press

**Market:** Neurobiology

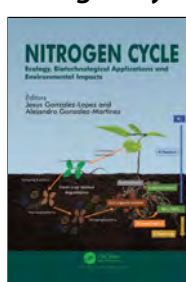
June 2021: 6.14 x 9.21: 336pp

Hb: 978-0-367-42029-1: **£120.00**

eBook: 978-0-367-82326-9

\* For full contents and more information, visit: [www.routledge.com/9780367420291](http://www.routledge.com/9780367420291)

## Nitrogen Cycle



Edited by **Jesus Gonzalez-Lopez** and **Alejandro Gonzalez-Martinez**

Anthropogenic activity has clearly altered the N cycle contributing (among other factors) to climate change. This book aims to provide new biotechnological approach representing innovative strategies to solve specific problems related to the imbalance originating in the N cycle. Aspects such as new conceptions in agriculture, wastewater treatment, and greenhouse gas emissions are discussed in this book with a multidisciplinary vision. A team of international authors with wide experience have contributed up-to-date reviews, highlighting scientific principles and their environmental

importance and integrating different biotechnological processes in environmental technology.

CRC Press

**Market:** Agricultural Science

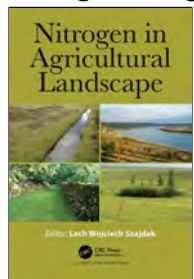
July 2021: 7 x 10: 292pp

Hb: 978-0-367-26037-8: **£150.00**

eBook: 978-0-429-29118-0

\* For full contents and more information, visit: [www.routledge.com/9780367260378](http://www.routledge.com/9780367260378)

## Nitrogen in Agricultural Landscape



Edited by Lech Wojciech Szajdak, Institute for Agricultural and Forest Environment, Polish Academy of Sciences, Poland  
Agriculture transforms the environment. The simplification of agroecosystems structure increases the hazards of leaching, wind and water erosion, and volatilization of chemicals from soil. Soil nitrogen is of interest as a major crop nutrient, but also as a potential environmental pollutant. Knowledge about the behavior of soil nitrogen is desirable in order to optimize plant growth and crop yield and to minimize environmental side effects. This book also gives information about the function of biogeochemical barriers in the form of shelterbelts, which efficiently decrease the concentrations of various forms of nitrogen in ground water.

CRC Press

Market: AGRICULTURAL SCIENCES

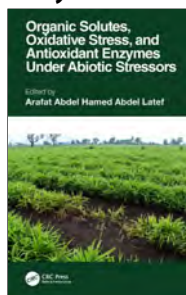
June 2021: 6.14 x 9.21: 208pp

Hb: 978-0-367-34315-6: £120.00

eBook: 978-0-429-35135-8

\* For full contents and more information, visit: [www.routledge.com/9780367343156](http://www.routledge.com/9780367343156)

## Organic Solutes, Oxidative Stress, and Antioxidant Enzymes Under Abiotic Stressors



Edited by Arafat Abdel Hamed Abdel Latef, South Valley University, Egypt

This book presents evidence-based approaches and techniques used to diagnose and manage organic solutes, oxidative stress, and antioxidant enzymes in crop plants under abiotic stressors. It discusses strategies in abiotic stress tolerance including osmoregulation, osmoprotectants, and the regulation of compatible solutes and antioxidant enzymes in plants. With contributions from 49 scholars worldwide, this authoritative guide is educational for scientists working with plants and abiotic stressors. This book is written for graduate students and scholars researching abiotic plant stressors.

CRC Press

Market: Botany

July 2021: 7 x 10: 414pp

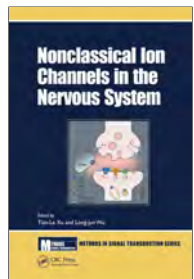
Hb: 978-0-367-90140-0: £150.00

Pb: 978-1-032-04052-3: £68.99

eBook: 978-1-003-02287-9

\* For full contents and more information, visit: [www.routledge.com/9780367901400](http://www.routledge.com/9780367901400)

## Non-Classical Ion Channels in the Nervous System



Edited by Xu Tian-le and Long-Jun Wu

Series: *Methods in Signal Transduction Series*

Ion channels generate bioelectricity. Recent findings have documented the biophysical properties, the structure, assembly and regulation, and function and dysfunction of nonclassical nervous system ion channels. This book reviews nonclassical ion channel research, ranging from the basic biology, structure, regulations to their functions not only in normal physiology but also neurological disorders, using a variety of cutting-edge techniques and novel animal models.

CRC Press

Market: Cell Biology

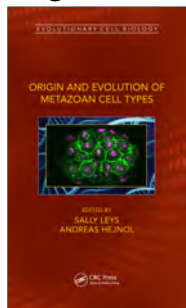
August 2021: 6.14 x 9.21: 432pp

Hb: 978-0-367-62395-1: £170.00

eBook: 978-1-003-10926-6

\* For full contents and more information, visit: [www.routledge.com/9780367623951](http://www.routledge.com/9780367623951)

## Origin and Evolution of Metazoan Cell Types



Edited by Sally Leys and Andreas Hejnol, Sars International Centre for Marine Molecular Biology, University of Bergen, Norway

Series: *Evolutionary Cell Biology*

The evolution of animal diversity is strongly affected by the origin of novel cell and tissue types and their interactions with each other. This book reveals the interplay between gains and losses and provides readers with a better grasp of the evolutionary history of cell types. In addition, the book illustrates how new cell types allow a better understanding permitting the discrimination between convergence and homology.

CRC Press

Market: Life Science

May 2021: 6.14 x 9.21: 186pp

Hb: 978-1-138-03269-9: £89.99

eBook: 978-1-315-38822-9

\* For full contents and more information, visit: [www.routledge.com/9781138032699](http://www.routledge.com/9781138032699)

## Oceanography and Marine Biology: An Annual Review, Volume 59

Edited by S J Hawkins, University of Southampton, UK

Series: *Oceanography and Marine Biology - An Annual Review*

'Oceanography and Marine Biology: An Annual Review' remains one of the most cited sources in marine science and oceanography. For nearly 60 years, OMBAR has been an essential reference for research workers and students in all fields of marine science. This volume considers such diverse topics as Mediterranean marine caves, the Great Barrier Reef Expedition, macromedusae in eastern boundary currents, Marine biodiversity in Korea, and development of a geo-ecological carbonate reef system model to predict responses of reefs to climate change. Seven of the peer-reviewed contributions in Volume 59 are available to read Open Access on this webpage (1, 2, 3, 4, 5, 6 and 9).

CRC Press

Market: Life Science

August 2021: 7 x 10: 496pp

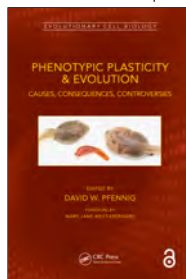
Hb: 978-0-367-68522-5: £180.00

eBook: 978-1-003-13884-6

\* For full contents and more information, visit: [www.routledge.com/9780367685225](http://www.routledge.com/9780367685225)

## Phenotypic Plasticity & Evolution

Causes, Consequences, Controversies



Edited by David W. Pfennig, University of North Carolina

Series: *Evolutionary Cell Biology*

Phenotypic plasticity – the ability of an individual organism to alter its features in direct response to a change in its environment – is ubiquitous. Understanding how and why this phenomenon exists is crucial because it unites all levels of biological inquiry. This book brings together researchers who approach plasticity from diverse perspectives to explore new ideas and recent findings about the causes and consequences of plasticity.

CRC Press

Market: Developmental Biology

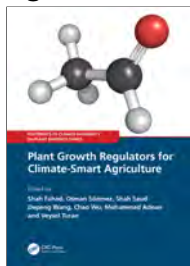
June 2021: 6.14 x 9.21: 436pp

Hb: 978-0-367-35704-7: £170.00

eBook: 978-0-429-34300-1

\* For full contents and more information, visit: [www.routledge.com/9780367357047](http://www.routledge.com/9780367357047)

## Plant Growth Regulators for Climate-Smart Agriculture



Edited by **Shah Fahad, Osman Sonmez, Shah Saud, Depeng Wang, Chao Wu, Muhammad Adnan and Veyssel Turan**

*Series: Footprints of Climate Variability on Plant Diversity*

Climatic conditions are key determinants of plant growth, whether at the scale of temperature regulation of the cell cycle, or at the scale of the geographic limits for a particular species. The climate is changing, due to human activities - particularly the emission of greenhouse gases - and therefore the conditions for the establishment, growth, reproduction, survival and distribution of plant species are changing. In contrast to animals, plants can continuously cease and resume growth. This flexibility in their architecture and growth patterns is partly achieved by

the action of plant hormones.

CRC Press

**Market:** Agriculture Science

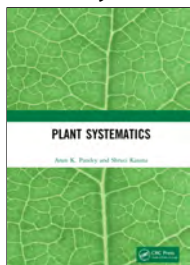
July 2021: 7 x 10: 224pp

Hb: 978-0-367-62343-2: **£125.00**

eBook: 978-1-003-10901-3

\* For full contents and more information, visit: [www.routledge.com/9780367623432](http://www.routledge.com/9780367623432)

## Plant Systematics



Arun K. Pandey and Shruti Kasana

This book is designed to introduce the fundamentals of systematics in a simple, concise and balanced manner. The book aims to equip the students with the basics of plant taxonomy and at the same time also update them with the most recent advances in the field of plant systematics. The book has been organized into 21 chapters that introduce and explain different concepts in a stimulating manner. Relevant literature has been added to provide a better picture of the most recent updates in the field of plant systematics. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

**Market:** Botany

June 2021: 6.85 x 9.69: 340pp

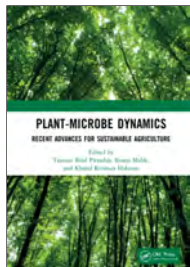
Hb: 978-1-032-02466-0: **£89.99**

eBook: 978-1-003-18346-4

\* For full contents and more information, visit: [www.routledge.com/9781032024660](http://www.routledge.com/9781032024660)

## Plant-Microbe Dynamics

Recent Advances for Sustainable Agriculture



Edited by **Tanveer Bilal Pirzadah, Bisma Malik and Khalid Rehman Hakeem**

This book shares the latest insight on omics technologies to unravel plant-microbe dynamic interactions and other novel phytotechnologies for cleaning contaminated soils. Besides, it also provides brief insight on the recently discovered clustered regularly interspaced short palindromic repeats (CRISPR)/Cas9-a genome editing tool to explore plant-microbe interactions and how this genome editing tool helps to improve the ability of microbes/plants to combat abiotic/biotic stresses.

CRC Press

**Market:** Life Science

June 2021: 7 x 10: 268pp

Hb: 978-0-367-61838-4: **£150.00**

eBook: 978-1-003-10678-4

\* For full contents and more information, visit: [www.routledge.com/9780367618384](http://www.routledge.com/9780367618384)

## Postharvest Handling and Diseases of Horticultural Produce



Edited by **Dinesh Singh, ICAR- Indian Agricultural Research Institute, India, Ram Roshan Sharma, ICAR-IARI, India, V. Devappa, University of Horticultural Sciences, India and Deebea Kamil, ICAR-IARI, India**

"Postharvest handling and diseases of horticultural produces" describes all the postharvest techniques, handling, pre-cooling, postharvest treatment, edible coating and storage of the horticultural produces available to handle perishable horticultural food commodities covering the areas of horticulture, agricultural process engineering, postharvest technology, plant pathology and microbiology. Postharvest diseases with their causal agents of major fruits and vegetables are being described.

CRC Press

**Market:** Life Science

September 2021: 8.25 x 11: 456pp

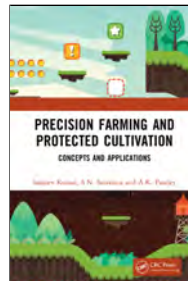
Hb: 978-0-367-49289-2: **£175.00**

eBook: 978-1-003-04550-2

\* For full contents and more information, visit: [www.routledge.com/9780367492892](http://www.routledge.com/9780367492892)

## Precision Farming and Protected Cultivation

Concepts and Applications



Sanjeev Kumar, S.N. Saravaiya and A.K. Pandey

The book features the concepts and applications of precision farming and protected cultivation broadly covered with theoretical and practical approach. The first 8 chapters provide detailed information on concept, applications and limitations of precision farming; precision management of insect-pests and diseases; yield mapping in horticultural crops. Rest of the chapters characteristically highlights the concept of greenhouse technology, agrivoltaic system, GAP for protected cultivation and economic analysis of protected cultivation. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

**Market:** Agriculture

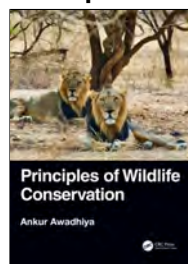
June 2021: 6.14 x 9.21: 342pp

Hb: 978-1-032-05276-2: **£89.99**

eBook: 978-1-003-19684-6

\* For full contents and more information, visit: [www.routledge.com/9781032052762](http://www.routledge.com/9781032052762)

## Principles of Wildlife Conservation



Ankur Awadhya

So how do we conserve wildlife? This is the question that *Principles of Wildlife Conservation* seeks to answer. It presents a lucid — cogent yet simple narration about the why's and how's of conserving wildlife. It begins with the first principles — and thus requires no more prerequisite than an urge to seek knowledge. It is full of pictures and case studies from the field — to facilitate easy grasping of the subject. The book builds a solid foundation of the theory of wildlife conservation, and tops that up with experiences from actually doing wildlife conservation. In this way, it equips the reader to master both the science, and the art, of conserving wildlife.

CRC Press

**Market:** AGRICULTURAL SCIENCES

June 2021: 8.25 x 11: 402pp

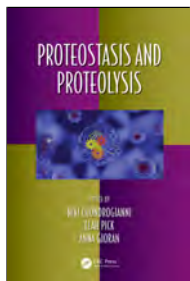
Hb: 978-1-032-02332-8: **£150.00**

Pb: 978-0-367-47993-0: **£61.99**

eBook: 978-1-003-03754-5

\* For full contents and more information, visit: [www.routledge.com/9781032023328](http://www.routledge.com/9781032023328)

## Proteostasis and Proteolysis



Edited by **Niki Chondrogianni, Elah Pick and Anna Gioran**  
*Series: Oxidative Stress and Disease*

Proteostasis integrates biological pathways controlling biogenesis, trafficking, folding, and degradation of proteins. This book focuses on two protein breakdown/degradation processes (proteolysis), which are part of a normally functioning proteostatic system: the ubiquitin-proteasome system and autophagy.

CRC Press

**Market:** Biochemistry

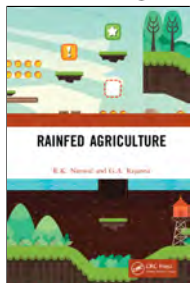
November 2021: 7 x 10: 304pp

Hb: 978-0-367-49932-7: **£89.99**

eBook: 978-1-003-04813-8

\* For full contents and more information, visit: [www.routledge.com/9780367499327](http://www.routledge.com/9780367499327)

## Rainfed Agriculture



R.K. Nanwal and G.A. Rajanna

The chapters of the book cover the entire gamut of rainfed agriculture supported by suitable examples and diagrams. The focus is on new concept and approaches in dryland and rainfed lands, efficient management of rainfed crops, water harvesting and moisture conservation, study of mulches and antitranspirants, principles of intercropping, concept of watershed resource management, drought and its management, stress physiology, scope of agro-horticultural, agro-forestry and silvi-pasture in dryland agriculture etc. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with NIPA.

CRC Press

**Market:** Agriculture

June 2021: 6 x 9: 342pp

Hb: 978-1-032-02460-8: **£89.99**

\* For full contents and more information, visit: [www.routledge.com/9781032024608](http://www.routledge.com/9781032024608)

## Recent Advances in Distillery Waste Management for Environmental Safety



**Vineet Kumar, Pankaj Chowdhary and Maulin P Shah,**  
 Environmental Microbiology Lab Bharuch, India

Recent Advances in Distillery Waste Management for Environmental Safety covers specific, advanced, and updated knowledge on various developed individual and/or innovative, green, and emerging plant-microbes based technologies uses for management and recycling of distillery waste in an environmentally-friendly and cost-effective manner for sustainable development. Moreover, this book provides comprehensive state-of-the-art information on the physicochemical properties, chemical composition, and environmental risks associated with distillery waste.

CRC Press

**Market:** Engineering-Environmental

August 2021: 7 x 10: 216pp

Hb: 978-0-367-46601-5: **£100.00**

eBook: 978-1-003-02988-5

\* For full contents and more information, visit: [www.routledge.com/9780367466015](http://www.routledge.com/9780367466015)

## Reconstructive Transplantation and Regenerative Medicine

The Emerging Interface

Edited by **Vijay Gorantla**, Wake Forest Institute for Regenerative Medicine, **Faith Zor**, Wake Forest Institute for Regenerative Medicine and **Jelena M. Janjic**

*Series: Gene and Cell Therapy*

This book summarizes rapid progress and innovation in transplantation and regenerative medicine - the merger of reconstructive plastic surgery and transplantation - called Vascularized Composite Allotransplantation. This merger includes face, hand, uteri, larynx, tongue, penis and trachea transplantations as well as other body part transplants using grafts derived from organ donors. These sorts of transplants are now performed more commonly. Cell therapies for immunomodulation are surrogates for immune responses after transplantation to non-invasive imaging of neuroregeneration for improving functional outcomes after transplant.

CRC Press

**Market:** Life Science

November 2021: 6.14 x 9.21: 208pp

Hb: 978-0-367-20208-8: **£89.99**

eBook: 978-0-429-26017-9

\* For full contents and more information, visit: [www.routledge.com/9780367202088](http://www.routledge.com/9780367202088)

## Redox Regulation of Differentiation and De-differentiation

Edited by **Carsten Berndt** and **Christopher Horst Lillig**

*Series: Oxidative Stress and Disease*

Even before oxygen appeared in our atmosphere, redox reactions provided the energy for metabolic steps in the evolution of life. Redox modifications are now important in cellular functions including differentiation/development. This book compiles current knowledge regarding the roles of redox regulation in differentiation and de-differentiation.

CRC Press

**Market:** Biochemistry

October 2021: 7 x 10: 432pp

Hb: 978-0-367-89566-2: **£140.00**

eBook: 978-1-003-20409-1

\* For full contents and more information, visit: [www.routledge.com/9780367895662](http://www.routledge.com/9780367895662)



## Sandy Beaches as Endangered Ecosystems

Environmental Problems and Possible Assessment and Management Solutions

Edited by **Silvia Correia Gonçalves Fernandes**, MARE-IPLeia, Marine and Environmental Sciences Centre, Peniche, Portugal and **Susana Margarida de Freitas Ferreira**, MARE-IPLeia, Marine and Environmental Sciences Centre, Peniche, Portugal

Sandy beaches are the most abundant coastal environment worldwide, and have an undeniable and unique ecological value. Presently, however, these environments are also one of the most endangered ecosystems, namely due to the influence of several human activities and to the rise of the sea level, aggravated by the ongoing global climatic changes. In Sandy Beaches as Endangered Ecosystems, contributing authors from around the world highlight the environmental problems that endanger these delicate systems worldwide, and point out management and conservation strategies, with case studies where environmental disturbances were assessed and monitored.

CRC Press

**Market:** Life Science

November 2021: 235 x 156: 368pp

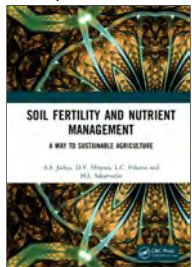
Hb: 978-0-367-14749-5: **£148.00**

eBook: 978-0-429-05325-2

\* For full contents and more information, visit: [www.routledge.com/9780367147495](http://www.routledge.com/9780367147495)

## Soil Fertility and Nutrient Management

A Way to Sustainable Agriculture



A.S. Jadeja, D.V. Hirpara, L.C. Vekaria and H.L. Sakarvadia

The book entitled "Soil fertility and Nutrient management" is a compilation work and most of the information was farmed very critically covering all the main topics of plant nutrition. The book will be serve as useful reference to students, teachers, researchers scientists, policy makers and other interested in soil science, agronomy, crop science, environmental sciences and agriculture.

Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

Market: Agriculture

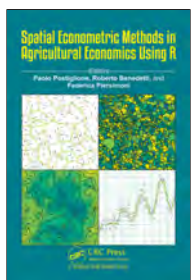
June 2021: 6.85 x 9.69: 268pp

Hb: 978-1-032-06005-7: £120.00

eBook: 978-1-003-20023-9

\* For full contents and more information, visit: [www.routledge.com/9781032060057](http://www.routledge.com/9781032060057)

## Spatial Econometric Methods in Agricultural Economics Using R



Paolo Postiglione, University of Chieti-Pescara, Italy, Roberto Benedetti, University of Chieti-Pescara, Italy and Federica Piersimoni, Agricultural Statistical Service, Italy

The book describes methods and techniques of spatial data and its use in monitoring agricultural resources, farms management and regional markets. Spatial econometrics models for different data types relevant to statistical units adopted in typical agricultural economics analyses, are introduced. Real examples developed using R, are provided for each model. Readers can use these analyses on their own data. The book describes different phases of agricultural data collection, analysis and integration.

CRC Press

Market: Statistics

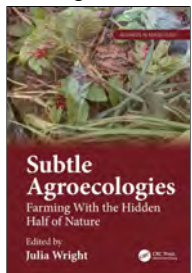
August 2021: 6.14 x 9.21: 200pp

Hb: 978-1-498-76681-4: £99.99

\* For full contents and more information, visit: [www.routledge.com/9781498766814](http://www.routledge.com/9781498766814)

## Subtle Agroecologies

Farming With the Hidden Half of Nature



Edited by Julia Wright, Coventry University, Centre for Agroecology, Coventry, United Kingdom

Series: *Advances in Agroecology*

This book forges a new discipline in the form of Subtle Agroecologies, a nexus of indigenous epistemologies, multidisciplinary advances in wave-based and ethereal studies, and the science of sustainable agriculture. Bringing together authors from 12 countries and 5 continents, it introduces the discipline and explains its potential contribution to Agroecology. The book is grounded in applied phenomena, offering different facets by which to approach and explore this invisible dimension of agriculture. Subtle Agroecologies could herald a new wave

of more sustainable farming techniques and changing our relationship with nature to one of collaboration rather than control.

CRC Press

Market: Agricultural Science

June 2021: 7 x 10: 384pp

Hb: 978-1-138-33981-1: £150.00

eBook: 978-0-429-44093-9

\* For full contents and more information, visit: [www.routledge.com/9781138339811](http://www.routledge.com/9781138339811)

## Sustainable Aquafeeds

Technological Innovation and Novel Ingredients



Edited by José M. Lorenzo and Jesus Simal-Gandara

This book explores the evolution of aquaculture feeds, explaining the current challenges and considering how advances in technologies and ingredients can produce aquafeeds for the increasing world population. International contributors provide information on the profile of the aquafeed industry, including factors affecting supplies and prices of key ingredients for aquafeed production. Chapters update readers on the most promising strategies, including the use of different ingredients for nutrient supplementations such as bacterial meals, plant-based proteins, algae and yeast to replace wild-caught ingredients, and the enhancement of their use by genetic selection.

CRC Press

Market: Marine Science

November 2021: 7 x 10: 384pp

Hb: 978-0-367-35444-2: £148.00

eBook: 978-0-429-33166-4

\* For full contents and more information, visit: [www.routledge.com/9780367354442](http://www.routledge.com/9780367354442)

## Sustainable Blue Revolution in India

Way Forward



Latha Shenoy and Shridhar Rajpathak

This book provides comprehensive information on several dimensions of blue revolution in a structured form. The subject of sustainable development of fisheries sector being very vast, concerted efforts have been made to accommodate all the relevant elements. Very little reading material with proper analysis is currently available and this book is expected to bridge the gap and project way-forward to achieve sustainable development of fisheries and aquaculture in India under the blue revolution. ; Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

CRC Press

Market: Aquaculture

June 2021: 6 x 9: 344pp

Hb: 978-1-032-02463-9: £89.99

eBook: 978-1-003-18344-0

\* For full contents and more information, visit: [www.routledge.com/9781032024639](http://www.routledge.com/9781032024639)

## Sustainable Soil and Land Management and Climate Change



Edited by Shah Fahad, Osman Sonmez, Shah Saud, Depeng Wang, Chao Wu, Muhammad Adnan and Veysel Turan

Series: *Footprints of Climate Variability on Plant Diversity*

The third volume of Sustainable Soil and Land Management and Climate Change presents a complete overview of plant soil interactions in a climate affected by greenhouse gas emissions and organic carbon. It presents approaches and managements strategies for the stabilization of soil organic matter.

The latest in the respected Footprints of Climate Variability on Plant Diversity series, this book enhances the reader's knowledge of the preservation of organic matter through microbial approaches as well as through soil and plant interactions. Written by teams of specialist scientists, it presents research outcomes, practical applications and future challenges for this important field.

CRC Press

Market: AGRICULTURAL SCIENCES

June 2021: 7 x 10: 194pp

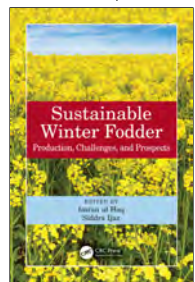
Hb: 978-0-367-62318-0: £125.00

eBook: 978-1-003-10889-4

\* For full contents and more information, visit: [www.routledge.com/9780367623180](http://www.routledge.com/9780367623180)

## Sustainable Winter Fodder

Production, Challenges, and Prospects



Edited by **Imran ul Haq** and **Siddra Ijaz**

Production and availability of sufficiently good quality forage under diverse ecological dynamics are fundamental to develop an efficient and productive livestock industry. Growers worldwide, especially in developing and underdeveloped countries, face significant challenges in producing sufficient winter fodder. The shortage of fodder production is the primary limiting factor for livestock production. This book features an extensive overview of literature providing information on winter fodders used in livestock management. This book is written for researchers and practitioners in agronomy, biotechnology, bioecology and is a comprehensive guide for improving winter fodder production.

CRC Press

**Market:** Botany

October 2021: 6.14 x 9.21: 352pp

Hb: 978-0-367-51798-4: **£150.00**

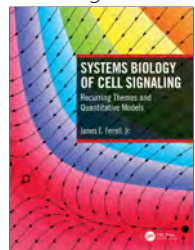
Pb: 978-0-367-51836-3: **£74.99**

eBook: 978-1-003-05536-5

\* For full contents and more information, visit: [www.routledge.com/9780367517984](http://www.routledge.com/9780367517984)

## Systems Biology of Cell Signaling

Recurring Themes and Quantitative Models



**James E. Ferrell**, Stanford University, USA

This textbook aims to provide advanced students with the tools and insights needed to carry out studies of signal transduction drawing upon modeling, theory and experimentation. It seeks to provide quantitatively inclined biologists and biologically inclined physicists with the tools needed to apply modeling/theory to biological processes. All chapters consistently use approaches and concepts from chemical kinetics and non-linear dynamics, including rate-balance analysis, phase plane analysis, nullclines, linear stability analysis, stable nodes, saddles, unstable nodes, stable and unstable spirals, and

bifurcations.

Garland Science

**Market:** Cell Biology

October 2021: 8.25 x 11: 264pp

Hb: 978-0-367-64383-6: **£175.00**

Pb: 978-0-815-34603-6: **£69.99**

eBook: 978-1-003-12426-9

\* For full contents and more information, visit: [www.routledge.com/9780367643836](http://www.routledge.com/9780367643836)

## Taxonomic Nomenclature

What's in a Name: History and Theory

**Igor Ya. Pavlinov**, Zoological Museum, Lomonosov Moscow State University

This book is a different look at nomenclature in systematics and not another "instruction for use" of various Codes of nomenclature. The focus is on ideas of what a taxonomic nomenclature is in its regulatory understanding and in its full historical and conceptual scope. Basic concepts of nomenclature are identified and their development characterized. General and fundamental principles of nomenclature are summarized. The relationship between the taxonomic nomenclature and the taxonomic theory is discussed. This book is addressed to those who would like to go beyond the boundaries of existing Codes and to look at the subject from a more general, mostly theoretical standpoint.

CRC Press

**Market:** Biology

November 2021: 6.14 x 9.21: 304pp

Hb: 978-1-032-01507-1: **£89.99**

eBook: 978-1-003-18253-5

\* For full contents and more information, visit: [www.routledge.com/9781032015071](http://www.routledge.com/9781032015071)



## The Amniote Nose

Edited by **Tomasz Owerkowicz**

There is a lack of comprehensive work integrating state-of-the-art knowledge on vertebrate sensory organs. The proposed volume fills this void for the nose of amniotes (mammals, reptiles, birds). Unlike other paired sense organs, the nose combines its primary sensory function - olfaction - with other important but under-appreciated physiological functions. The book details differences and similarities in form and function of the nose, and highlights areas of knowledge still requiring investigation. This is the first volume to combine various aspects of biologic investigation of a single sensory organ in vertebrates. Further, the book has important applications for biomedical research.

CRC Press

**Market:** Life Science

February 2021: 2.79 x 2.16: 450pp

Hb: 978-1-138-19817-3: **£127.00**

\* For full contents and more information, visit: [www.routledge.com/9781138198173](http://www.routledge.com/9781138198173)

## The Great Eagles

Evolution, Ecology and Conservation

**Michael O'Neal Campbell**, Simon Fraser University, Burnaby, Canada

This book presents an integrated perspective (paleontological, historical, physiological, ecological, conservationist and human cultural) of eagles, including fish eagles, harpy eagles, snake eagles and booted eagles. Topics examined include 21st century issues in relation to older published themes; species classifications based on physical methods and DNA analyses; species comparisons involving evolution, definitions, classification, and ecology; and recent advances in adaptive management and other policy actions relevant to bird conservation.

CRC Press

**Market:** Life Science

September 2021: 6.14 x 9.21: 400pp

Hb: 978-1-138-19743-5: **£230.00**

eBook: 978-1-315-27809-4

\* For full contents and more information, visit: [www.routledge.com/9781138197435](http://www.routledge.com/9781138197435)

## Today's Curiosity is Tomorrow's Cure

The Case for Basic Biomedical Research

**Steve Caplan**

Basic curiosity-driven biomedical science has delivered many of today's most significant medical advances.

CRC Press

**Market:** Biology

November 2021: 6 x 9: 232pp

Hb: 978-1-032-06595-3: **£69.99**

eBook: 978-1-003-20297-4

\* For full contents and more information, visit: [www.routledge.com/9781032065953](http://www.routledge.com/9781032065953)



## Towards Holistic Medicine

Bing Yuan, HK Modern Chinese Medicine R&D Center, Yau Ma Tei, Kowloon, Hong Kong, China

In recent years, systems biology seems to have encountered insurmountable obstacles. Precision medicine faces the problem of integration in disease regulation, despite the establishment of biomarker systems and the continuous discovery of new targeted drugs. *Towards Holistic Medicine* explores the development of modern medicine and the future medical model in the broader perspective of Chinese and Western medicine, biology, and even the methodological evolution of natural science in recent centuries. The book discusses how modern medicine will move past systems biology and precision medicine and toward holistic medicine.

CRC Press

Market: Healthcare

November 2021: 235 x 156: 320pp

Hb: 978-0-367-14534-7: £148.00

eBook: 978-0-429-03219-6

\* For full contents and more information, visit: [www.routledge.com/9780367145347](http://www.routledge.com/9780367145347)

## Toxicology for the Health and Pharmaceutical Sciences

Edited by Antonio Peña-Fernández, De Montfort University, Faculty of Health & Life Sciences Leicester, UK, Mark D. Evans, De Montfort University, Leicester, UK and Marcus S. Cooke, Department of Cell Biology, Microbiology, and Molecular Biology, University of South Florida

This book covers the fundamentals and recent developments in toxicology, to respond to local and global chemical, pharmaceutical and environmental threats. Chapters are specifically designed to support the understanding of the most current, toxicology-related subjects for any undergraduate/postgraduate health programmes, as well as aiding with the delivery of continuing professional development training on up-to-date topics in toxicology for current practicing health professionals wishing to improve their knowledge in toxicology. The book is also vital reading for policy makers, and others that influence and decide regulations that have an impact on the environment, and human health.

Chapman and Hall/CRC

Market: Life Sciences

September 2021: 7 x 10: 520pp

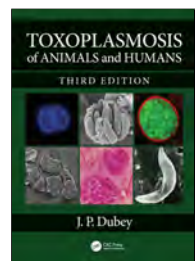
Hb: 978-1-138-30336-2: £155.00

eBook: 978-0-203-73058-4

\* For full contents and more information, visit: [www.routledge.com/9781138303362](http://www.routledge.com/9781138303362)

3rd Edition

## Toxoplasmosis of Animals and Humans



J. P. Dubey, USDA ARS, Beltsville, Maryland, USA

This is the only book to cover toxoplasmosis of animals and humans thoroughly in one single source. In the last decade there has been an explosion of knowledge concerning the parasite *Toxoplasma gondii* and toxoplasmosis. This update provides unique information on all known host types for this parasite, with a new chapter on history, substantial updates throughout, and a detailed focus on the biology of the parasite. The book distills the voluminous scientific literature into a comprehensive resource for all professionals, graduate students and researchers working in this field.

CRC Press

Market: Veterinary Science

September 2021: 8.25 x 11: 552pp

Hb: 978-0-367-54312-9: £150.00

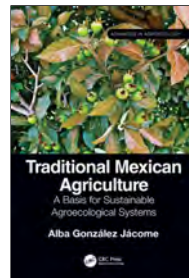
eBook: 978-1-003-19937-3

Prev. Ed Hb: 978-1-420-09236-3

\* For full contents and more information, visit: [www.routledge.com/9780367543129](http://www.routledge.com/9780367543129)

## Traditional Mexican Agriculture

A Basis for Sustainable Agroecological Systems



Alba González Jácome

Series: *Advances in Agroecology*

*Traditional Mexican Agriculture* is the result of a holistic study of Mexican agriculture. It offers the reader a perspective of traditional agriculture in Mexico from social, cultural and ecological Anthropology, Ethnology, regional and environmental History, and Agroecology, to help obtain sustainable agroecology where human societies obtain better ways of life and a healthy and nutritious food system. The book further aims to recover ideas, management, and components of local knowledge of small-scale farmers.

CRC Press

Market: Agriculture

October 2021: 7 x 10: 520pp

Hb: 978-0-367-46219-2: £120.00

eBook: 978-1-003-19883-3

\* For full contents and more information, visit: [www.routledge.com/9780367462192](http://www.routledge.com/9780367462192)

## Valuing Nature

The Roots of Transformation



Robert Fish and Holly McKelvey

This graphic novel-style textbook takes the reader on an exploration of the issues that arise from the growing interest in the valuation of nature. A 'motley' group of undergraduates are trying to complete a university assignment on 'nature in the modern world', leading to exploration of the diverse meanings assigned to nature, the different ways to characterise the relationship between people and nature, the many values systems held for the natural world and the approaches society can deploy to manage it. This highly interdisciplinary book invites consideration of a range of philosophical and applied debates and questions, ideal for use in the classroom.

CRC Press

Market: Ecology

July 2021: 7 x 10: 152pp

Hb: 978-0-367-76266-7: £49.99

Pb: 978-0-367-76265-0: £19.99

eBook: 978-1-003-16617-7

\* For full contents and more information, visit: [www.routledge.com/9780367762667](http://www.routledge.com/9780367762667)

## Vertebrate Cranial Placodes



Gerhard Schlosser

Series: *Evolutionary Cell Biology*

Most of the cranial sense organs of vertebrates arise from embryonic structures known as cranial placodes. Such placodes also give rise to sensory neurons that transmit information to the brain as well as to many neurosecretory cells. Schlosser discusses how these primordia are established in the early embryo and how individual placodes develop. The latter chapters explain how various placodally derived sensory and neurosecretory cell types differentiate into discrete structures.

CRC Press

Market: Developmental Biology

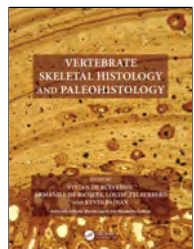
July 2021: 6.14 x 9.21: 596pp

Hb: 978-0-367-74853-1: £190.00

eBook: 978-1-003-24063-1

\* For full contents and more information, visit: [www.routledge.com/9780367748531](http://www.routledge.com/9780367748531)

## Vertebrate Skeletal Histology and Paleohistology



Edited by **Vivian de Buffrénil**, Muséum National d'Histoire Naturelle, Paris, France (retired), **Armand J. de Ricqlès**, UPMC, Université Paris, France, **Louise Zylberberg**, Centre National de la Recherche Scientifique, Sorbonnes-Universités, Paris, France and **Kevin Padian**, University of California, Berkeley, USA

Synthesizing current advances in the biological problems of growth, metabolism, evolution, ecology, and behavior, this comprehensive and authoritative volume is built upon a foundation of concepts and technology generated over the past fifty years.

CRC Press

**Market:** Life Science

June 2021: 8.25 x 11: 838pp

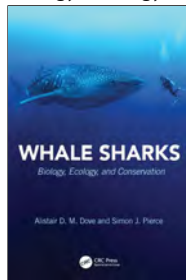
Hb: 978-0-815-39288-0: **£200.00**

eBook: 978-1-351-18959-0

\* For full contents and more information, visit: [www.routledge.com/9780815392880](http://www.routledge.com/9780815392880)

## Whale Sharks

Biology, Ecology, and Conservation



Edited by **Alistair D.M. Dove** and **Simon J. Pierce**

Series: *CRC Marine Biology Series*

Written by the world's leading experts in whale shark biology, ecology, and conservation, *Whale Sharks: Biology, Ecology and Conservation* is the first definitive volume about the world's biggest fish. Chapters include discussions of satellite-linked tags, used to track whale shark movements; genetic sequencing, to examine evolutionary adaptations; even the use of underwater ultrasound units to investigate the species' reproduction. The editors hope that by collating what is known, they can make it easier for future researchers, conservationists, and resource managers to fill some of the remaining knowledge gaps, and provide the information they need to join the team.

CRC Press

**Market:** Life Science

August 2021: 7 x 10: 352pp

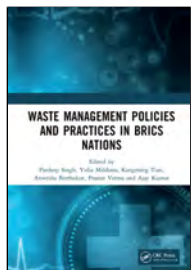
Hb: 978-1-032-04940-3: **£192.99**

Pb: 978-1-138-57129-7: **£76.99**

eBook: 978-0-203-70291-8

\* For full contents and more information, visit: [www.routledge.com/9781032049403](http://www.routledge.com/9781032049403)

## Waste Management Policies and Practices in BRICS Nations



Edited by **Pardeep Singh**, University Of Delhi, India, **Yulia Milshina**, National Research University, Russia, **Kangming Tian**, Anwesha Borthakur, Leuven International and European Studies, Belgium, **Pramit Verma** and **Ajay Kumar**, Agriculture research organization, Israel

Waste Management policies and practices in BRICS Nation explores recent developments in waste management. BRICS nations are the emerging economy of the world. Increasing population, urbanization, industrialization and uses of chemical fertilizer and pesticide in agriculture for enhanced productivity of food, especially in India and China, to support the large population harms the natural environment. The rise in the living

standard of the human population has increased the environmental pollution manifolds resulting in the huge generation of biodegradable and non -biodegradable waste simultaneously.

CRC Press

**Market:** Environmental Science

August 2021: 7 x 10: 348pp

Hb: 978-0-367-44099-2: **£150.00**

eBook: 978-1-003-00757-9

\* For full contents and more information, visit: [www.routledge.com/9780367440992](http://www.routledge.com/9780367440992)

## Wastelands

New Paradigms in Sustainable Biomass Cropping Systems in Marginal Lands

Edited by **Emiliano Maletta**, Research Center for Energy, Environment & Technology, Ministry of Economy & Competitiveness (CIEMAT), Madrid, Spain, **Hans Langeveld** and **Maria Valentina Lasorella**, Agricultural Research, Bologna, Italy

After years of debating food vs. fuel, researchers and policymakers now realize that the planet has around 3 billion hectares of surplus lands we can use for non-food purposes. This book provides a comprehensive discussion on how more resilient biomass systems can replace fossil energy and illuminates sustainable solutions for utilizing marginal lands where food and energy are both big barriers for human progress and socioeconomic development. In addition, the book discusses the benefits for biodiversity, erosion control, rural employment, wildfires, and even soil improvement in semiarid tropical and temperate areas with low profitability for traditional food alternatives.

CRC Press

**Market:** Agricultural Science

September 2021: 235 x 156: 500pp

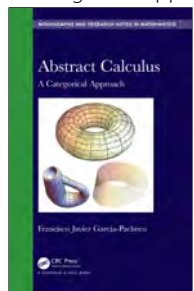
Hb: 978-1-498-78449-8: **£127.00**

eBook: 978-1-315-15560-9

\* For full contents and more information, visit: [www.routledge.com/9781498784498](http://www.routledge.com/9781498784498)

## Abstract Calculus

A Categorical Approach



Francisco Javier Garcia-Pacheco, Universidad de Cadiz, Spain

Series: *Chapman & Hall/CRC Monographs and Research Notes in Mathematics*

This book provides an abstract approach to calculus. It is intended for graduate students pursuing a Ph.D. in Pure Mathematics, but may also find an interested audience among junior and senior researchers in basically any field of Mathematics and Theoretical Physics. Any calculus text for undergraduate students majoring in Engineering, Mathematics or Physics deals with the classical concepts of limits, continuity, differentiability, optimization, integrability, summability, and approximation. This book covers the exact same topics but from a categorical

perspective, taking the Category of Topological Modules as the main category involved.

Chapman and Hall/CRC

Market: Mathematics

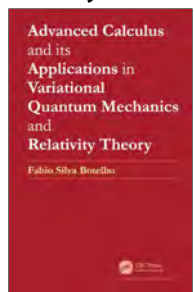
September 2021: 6.14 x 9.21: 400pp

Hb: 978-0-367-76220-9: £140.00

eBook: 978-1-003-16655-9

\* For full contents and more information, visit: [www.routledge.com/9780367762209](http://www.routledge.com/9780367762209)

## Advanced Calculus and its Applications in Variational Quantum Mechanics and Relativity Theory



Fabio Silva Botelho, Federal University of Santa Catarina, Brazil

The first part of this book reviews some key topics on multi-variable advanced calculus. The approach presented includes detailed and rigorous studies on surfaces in  $R^n$  which comprises items such as differential forms and an abstract version of the Stokes Theorem in  $R^n$ . The conclusion section introduces readers to Riemannian geometry, which is used in the subsequent chapters. The second part reviews applications, specifically in variational quantum mechanics and relativity theory.

CRC Press

Market: Applied Mathematics

July 2021: 6.14 x 9.21: 334pp

Hb: 978-0-367-74645-2: £125.00

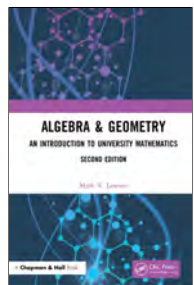
eBook: 978-1-003-15891-2

\* For full contents and more information, visit: [www.routledge.com/9780367746452](http://www.routledge.com/9780367746452)

2nd Edition

## Algebra & Geometry

An Introduction to University Mathematics



Mark V. Lawson

This book provides a bridge between high school and undergraduate mathematics courses on algebra and geometry. The text focuses on linear equations, polynomial equations, and quadratic forms. The first few chapters cover foundational topics, including the importance of proofs and a discussion of the properties commonly encountered when studying algebra. The remaining chapters form the mathematical core of the book. These chapters explain the solution of different kinds of algebraic equations, the nature of the solutions, and the interplay between geometry and algebra.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 424pp

Hb: 978-0-367-56508-4: £130.00

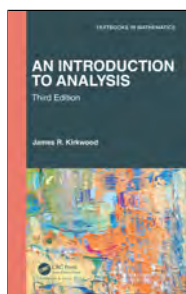
Pb: 978-0-367-56303-5: £49.99

eBook: 978-1-003-09807-2

\* For full contents and more information, visit: [www.routledge.com/9780367565084](http://www.routledge.com/9780367565084)

3rd Edition

## An Introduction to Analysis



James R. Kirkwood, Sweet Briar College, Virginia, USA

Series: *Textbooks in Mathematics*

The third edition of this widely popular textbook provides a mathematically rigorous introduction to analysis of real-valued functions of one variable. This intuitive, student-friendly text is written in a manner that will help to ease the transition from primarily computational to primarily theoretical mathematics.

The material is presented clearly and as intuitive as possible while maintaining mathematical integrity. The author supplies the ideas of the proof and leaves the write-up as an exercise. The text also states why a step in a proof is the reasonable thing to do and which techniques are recurrent.

Chapman and Hall/CRC

Market: Mathematics

August 2021: 6.14 x 9.21: 336pp

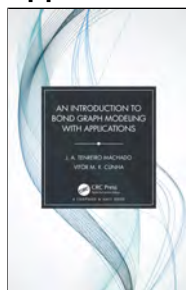
Hb: 978-0-367-70235-9: £74.99

eBook: 978-1-003-14514-1

\* For full contents and more information, visit: [www.routledge.com/9780367702359](http://www.routledge.com/9780367702359)



## An Introduction to Bond Graph Modeling with Applications



J. A. Tenreiro Machado and Vitor M. R. Cunha

This book presents a collection of exercises on dynamical systems, modeling and control for university students in the areas of engineering, physics and applied mathematics. We can find several books on bond graphs, but most merely a small set of exercises and, in a few cases, some commands for computer packages like MATLAB or Mathematica. It is difficult to find books with a broad set of solved exercises and proposed exercises with solutions, guiding researchers starting their work with bond graphs, or students who are just beginning their study of the topic. This book aims to fill that gap, and provide a comprehensive, reader-friendly introduction to the bond graph modeling tool.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 266pp

Hb: 978-0-367-52341-1: £90.00

eBook: 978-1-003-05774-1

\* For full contents and more information, visit: [www.routledge.com/9780367523411](http://www.routledge.com/9780367523411)

## Banach Limit and Applications

Gokulananda Das, Retd., Utkal Univ. and Sudarsan Nanda, KIIT Bhubaneswar

This book provides all the results in the area of Banach limit, its extensions, generalizations and applications to various fields in one go (as far as possible). Sublinear functionals generating and dominating Banach Limit, unique Branch Limit (almost convergence), invariant means and invariant limits, absolute and strong almost convergence, applications to ergodicity, law of large number, Fourier series, uniform distribution of sequences, uniform density, core theorems, functional Banach limits are discussed in this book. The book is suitable for one or two semester course work for Ph. D. students, M.S. Students of North America and Europe, M. Phil and Masters Students of India.

Chapman and Hall/CRC

Market: Mathematics

October 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-69865-2: £120.00

eBook: 978-1-003-14409-0

\* For full contents and more information, visit: [www.routledge.com/9780367698652](http://www.routledge.com/9780367698652)

## Basic Analysis

Volumes I–V



**James K. Peterson**, Clemson University, USA

*Basic Analysis: Volumes I–V* is written with the aim of balancing theory and abstraction with clear explanations and arguments, so that students and researchers alike who are from a variety of different areas can follow this text and use it profitably for self-study.

These volumes can also be used as a supplementary text for anyone whose work requires that they begin to assimilate more abstract mathematical concepts as part of their professional growth.

Chapman and Hall/CRC

**Market:** Mathematics

May 2021: 7 x 10: 2688pp

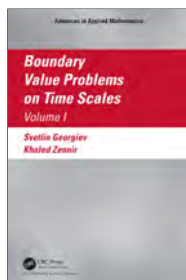
Hb: 978-1-138-05514-8: **£400.00**

eBook: 978-1-003-16876-8

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## Boundary Value Problems on Time Scales, Volume I



**Svetlin Georgiev and Khaled Zennir**

*Series: Advances in Applied Mathematics*

This book is devoted to the qualitative theory of boundary value problems on time scales. It summarizes the most recent contributions in this area.

Chapman and Hall/CRC

**Market:** Mathematics

September 2021: 6.14 x 9.21: 694pp

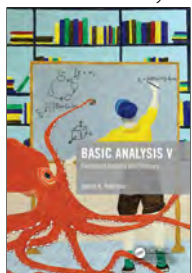
Hb: 978-1-032-00291-0: **£150.00**

eBook: 978-1-003-17355-7

\* For full contents and more information, visit: [www.routledge.com/9781032002910](http://www.routledge.com/9781032002910)

## Basic Analysis V

Functional Analysis and Topology



**James K. Peterson**, Clemson University, USA

This book introduces graduate students in mathematics with concepts from topology and functional analysis, both linear and nonlinear. It is the fifth book in a series designed to train interested readers how to think properly using mathematical abstractions, and how to use the tools of mathematical analysis in applications.

Chapman and Hall/CRC

**Market:** Mathematics

August 2021: 7 x 10: 586pp

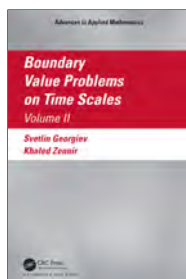
Hb: 978-1-138-05513-1: **£120.00**

eBook: 978-1-315-16615-5

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## Boundary Value Problems on Time Scales, Volume II



**Svetlin Georgiev and Khaled Zennir**

*Series: Advances in Applied Mathematics*

This book is devoted to the qualitative theory of boundary value problems on time scales. It summarizes the most recent contributions in this area.

Chapman and Hall/CRC

**Market:** Mathematics

September 2021: 6.14 x 9.21: 450pp

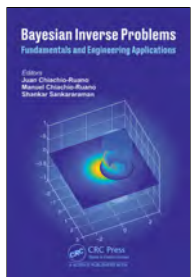
Hb: 978-1-032-00805-9: **£150.00**

eBook: 978-1-003-17582-7

\* For full contents and more information, visit: [www.routledge.com/9781032008059](http://www.routledge.com/9781032008059)

## Bayesian Inverse Problems

Fundamentals and Engineering Applications



Edited by **Juan Chiacchio-Ruano**, University of Nottingham, UK, **Shankar Sankararaman**, NASA Ames Research Center, Moffett Field, CA, USA and **Manuel Chiacchio-Ruano**, University of Nottingham, UK

This book is devoted to a special class of engineering problems called *Bayesian inverse problems*. These problems comprise not only the probabilistic Bayesian formulation of engineering problems, but also the associated stochastic simulation methods needed to solve them. Through this book, the reader will learn how this class of methods can be useful to rigorously address a range of engineering problems where empirical data and fundamental knowledge come into play. The book is written for a non-expert audience and it is contributed by many of the most renowned academic experts in this field.

CRC Press

**Market:** Statistics

November 2021: 7 x 10: 248pp

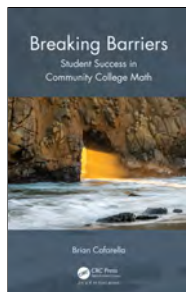
Hb: 978-1-138-03585-0: **£140.00**

eBook: 978-1-315-23297-3

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## Breaking Barriers

Student Success in Community College Mathematics



**Brian Cafarella**

The book presents the results of a study focused on students who struggled in mathematics. Though their experiences varied, they all entered community college with a great deal of disgust and anxiety toward mathematics courses and requirements. These impressions and attitudes create barriers to success. However, all the students eventually succeeded in fulfilling their college-level mathematics requirement.

A K Peters/CRC Press

**Market:** Mathematics Education

June 2021: 6.14 x 9.21: 222pp

Hb: 978-1-032-02425-7: **£57.99**

Pb: 978-1-032-00797-7: **£22.99**

eBook: 978-1-003-17580-3

\* For full contents and more information, visit: [www.routledge.com/9781032024257](http://www.routledge.com/9781032024257)

## Combinatorial Nullstellensatz

With Applications to Graph Colouring



Xuding Zhu and R. Balakrishnan

Combinatorial Nullstellensatz (abbreviated as CNS) is a major theorem in Algebra designed to tackle several combinatorial problems in diverse areas of mathematics. This book provides applications to several areas of mathematics such as geometry, number theory, graph theory etc. It also provides links to other areas of mathematics such as permanents, graph colorings, etc. This book would appeal both to those studying combinatorics/graph theory and algebra

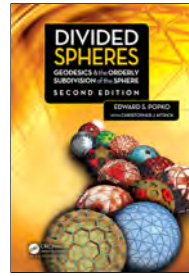
Chapman and Hall/CRC  
**Market:** Mathematics  
 June 2021: 5.5 x 8.5: 150pp  
 Hb: 978-0-367-68694-9: **£48.99**  
 eBook: 978-1-003-13867-9

\* For full contents and more information, visit: [www.routledge.com/9780367686949](http://www.routledge.com/9780367686949)

2nd Edition

## Divided Spheres

Geodesics and the Orderly Subdivision of the Sphere



Edward S. Popko and Christopher J. Kitrick

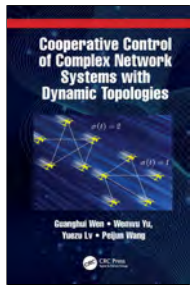
This first edition of this well-illustrated book presented a thorough introduction to the mathematics of Buckminster Fuller's invention of the geodesic dome, which paved the way for a flood of practical applications as diverse as weather forecasting and fish farms. The author explained the principles of spherical design and the three classic methods of subdivision based on geometric solids (polyhedra).

This thoroughly edited new edition does all that, while also introducing new techniques that extend the class concept by relaxing the triangulation constraint to develop two new forms of optimized hexagonal tessellations.

A K Peters/CRC Press  
**Market:** Mathematics  
 August 2021: 7 x 10: 484pp  
 Hb: 978-0-367-68003-9: **£89.99**  
 eBook: 978-1-003-13411-4  
 Prev. Ed Hb: 978-1-466-50429-5

\* For full contents and more information, visit: [www.routledge.com/9780367680039](http://www.routledge.com/9780367680039)

## Cooperative Control of Complex Network Systems with Dynamic Topologies



Guanghui Wen, Wenwu Yu, Yuezu Lv and Peijun Wang

As one of the most fundamental examples of cooperative behaviour, consensus within CNSs has gained considerable attention from various fields of research, including systems science, control theory and electrical engineering. This book mainly studies consensus of CNSs with dynamics topologies - unlike most existing books that have focused on consensus control and analysis for CNSs under a fixed topology. As most practical networks have limited communication ability, switching graphs can be used to characterize real-world communication topologies, leading to a wider range of practical applications. Both professional researchers and laypeople will benefit from this book.

CRC Press  
**Market:** Complex System, Control Engineering, Mathematics  
 July 2021: 7 x 10: 304pp  
 Hb: 978-1-032-01913-0: **£74.99**  
 eBook: 978-1-003-18098-2

\* For full contents and more information, visit: [www.routledge.com/9781032019130](http://www.routledge.com/9781032019130)

## Dynamic Geometry on Time Scales

Svetlin G. Georgiev

This book provides the first and second fundamental forms of surfaces on time scales. They are introduced minimal surfaces and geodesics on time scales. In the book are studied the covariant derivatives on time scales, pseudo-spherical surfaces and  $\Sigma_{\sigma_1}$ ,  $\Sigma_{\sigma_2}$  manifolds on time scales.

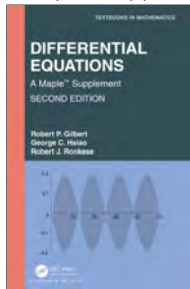
Chapman and Hall/CRC  
**Market:** Mathematics  
 November 2021: 6.14 x 9.21: 400pp  
 Hb: 978-1-032-07078-0: **£130.00**  
 eBook: 978-1-003-20526-5

\* For full contents and more information, visit: [www.routledge.com/9781032070780](http://www.routledge.com/9781032070780)

2nd Edition

## Differential Equations

A Maple™ Supplement



Robert P. Gilbert, University of Delaware, Newark, USA, George C. Hsiao and Robert J. Ronkese

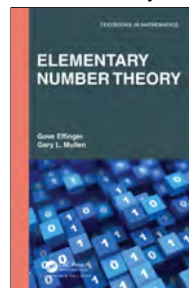
Series: *Textbooks in Mathematics*

This book illustrates how MAPLE™ can be used to supplement a standard, elementary text in ordinary and partial differential equation. The authors are firm believers in the teaching of mathematics as an experimental science where the student does numerous calculations and then synthesizes these experiments into a general theory. The goal of the book is to teach the students enough about the computer algebra system MAPLE™ so that it can be used in an investigative way. This book was developed through ten years of instruction in the differential equations course.

Chapman and Hall/CRC  
**Market:** Mathematics  
 June 2021: 6.14 x 9.21: 243pp  
 Hb: 978-1-032-02179-9: **£120.00**  
 Pb: 978-1-032-00781-6: **£44.99**  
 eBook: 978-1-003-17564-3

\* For full contents and more information, visit: [www.routledge.com/9781032021799](http://www.routledge.com/9781032021799)

## Elementary Number Theory



Gove Effinger and Gary L. Mullen

Series: *Textbooks in Mathematics*

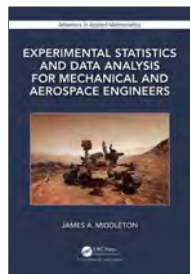
This text is intended to be used as an undergraduate introduction to the theory of numbers. Each chapter, after an introduction, develops a new topic clearly broken out in sections which include theoretical material together with numerous examples, each worked out in considerable detail. At the end of each chapter, after a summary of the topic, there are a number of solved problems, also worked out in detail, followed by a set of supplementary problems. The first eight chapters discuss some standard material in elementary number theory. The remaining chapters discuss topics which might be considered a bit more advanced. We then close with a chapter on Open

Problems in Number Theory.

Chapman and Hall/CRC  
**Market:** Mathematics  
 September 2021: 6.14 x 9.21: 254pp  
 Hb: 978-1-032-04418-7: **£120.00**  
 Pb: 978-1-032-01723-5: **£44.95**  
 eBook: 978-1-003-19311-1

\* For full contents and more information, visit: [www.routledge.com/9781032044187](http://www.routledge.com/9781032044187)

## Experimental Statistics and Data Analysis for Mechanical and Aerospace Engineers



James A. Middleton

Series: *Advances in Applied Mathematics*

This text will introduce students to key concepts in probability and statistics with applications in mechanical and aerospace engineering. Emphasis is placed on modelling variation in observations, characterizing its distribution, and making inferences with regards to quality assurance and control. Fitting multivariate models, experimental design and hypothesis testing are all critical skills developed in the course. All topics are developed utilizing data from engineering projects, simulations, and laboratory experiences. MatLab is used throughout.

Chapman and Hall/CRC

Market: Engineering

November 2021: 7 x 10: 608pp

Hb: 978-0-367-55596-2: **£89.99**

eBook: 978-1-003-09422-7

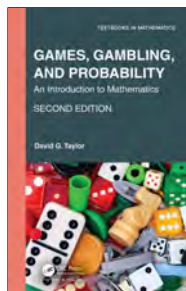
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2nd Edition

## Games, Gambling, and Probability

An Introduction to Mathematics



David G. Taylor, Roanoke College, Salem, Virginia, USA

Series: *Textbooks in Mathematics*

The goal for this textbook is to complement the inquiry-based learning movement. According to the author, concepts and ideas will stick with the reader more when they are motivated in an interesting way. Here, we use questions about various games (not just casino games) to motivate the mathematics, and the writing aims to emphasize a "just-in-time" mathematics approach. Topics are presented mathematically as questions about the games themselves are posed.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 516pp

Hb: 978-0-367-82043-5: **£74.99**

eBook: 978-1-003-01158-3

Prev. Ed Hb: 978-1-482-23543-2

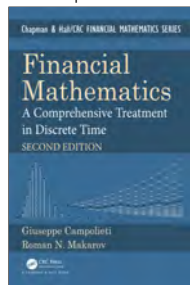
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2nd Edition

## Financial Mathematics

A Comprehensive Treatment in Discrete Time



Giuseppe Campolieti, Wilfrid Laurier University, Waterloo, Ontario, Canada and Roman N. Makarov, Wilfrid Laurier University, Waterloo, Ontario, Canada

Series: *Chapman and Hall/CRC Financial Mathematics Series*

The book has been tested and refined through years of classroom teaching experience. With an abundance of examples, problems, and fully worked out solutions, the text introduces the financial theory and relevant mathematical methods in a mathematically rigorous yet engaging way.

This textbook provides complete coverage of discrete-time financial models that form the cornerstones of financial derivative pricing theory. Unlike similar texts in the field, this one presents

multiple problem-solving approaches, linking related comprehensive techniques for pricing different types of financial derivatives.

Chapman and Hall/CRC

Market: Financial Mathematics

July 2021: 7 x 10: 589pp

Hb: 978-1-138-58787-8: **£84.99**

eBook: 978-0-429-50366-5

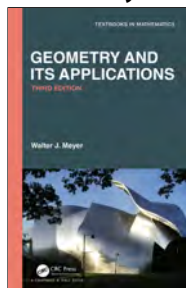
Prev. Ed Hb: 978-1-439-89242-8

\* For full contents and more information, visit: [www.routledge.com/9781138587878](http://www.routledge.com/9781138587878)



3rd Edition

## Geometry and Its Applications



Walter J. Meyer

Series: *Textbooks in Mathematics*

This unique textbook combines traditional geometry presents a contemporary approach that is grounded in real-world applications. It balances the deductive approach with discovery learning, introduces axiomatic, Euclidean and non-Euclidean, and transformational geometry. The text integrates applications and examples throughout. The Third Edition offers many updates, including expanding on historical notes, Geometry and Its Applications is a significant text for any college or university that focuses on geometry's usefulness in other disciplines. It is especially appropriate for engineering and science majors, as well as future mathematics teachers.

Chapman and Hall/CRC

Market: Mathematics

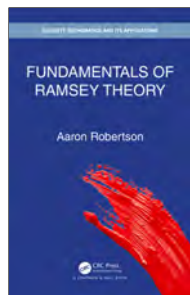
September 2021: 6.14 x 9.21: 512pp

Hb: 978-0-367-18798-9: **£99.99**

eBook: 978-0-429-19832-8

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## Fundamentals of Ramsey Theory



Aaron Robertson, Colgate University

Series: *Discrete Mathematics and Its Applications*

This up-to-date book introduces the field of Ramsey theory from several different viewpoints so that the reader can decide which flavor of Ramsey theory best suits them. The book covers integer, graph, and Euclidean Ramsey theory with many proofs being combinatorial in nature. The author motivates topics and discussion, rather than just a list of theorems and proofs. In order to engage the reader, each chapter has a section of exercises. The presentation is comprehensive and reader friendly.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 255pp

Hb: 978-1-138-36433-2: **£74.99**

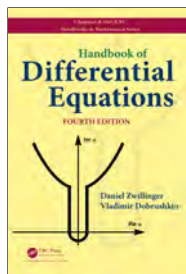
eBook: 978-0-429-43141-8

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4th Edition

## Handbook of Differential Equations



Daniel Zwillinger, Rensselaer Polytechnic Institute, NY, USA and Vladimir Dobrushkin, Brown University, Providence, Rhode Island, USA

Series: *Advances in Applied Mathematics*

Through the previous three editions, this book has proven an invaluable reference for anyone working within the field of mathematics, including academics, students, scientists, and professional engineers.

The book is a compilation of methods for solving and approximating differential equations. These include the most widely applicable methods for solving and approximating differential equations, as well as numerous methods. Topics include methods for ordinary differential equations, partial differential equations, stochastic differential equations, and systems of such equations.

Chapman and Hall/CRC

Market: Mathematics

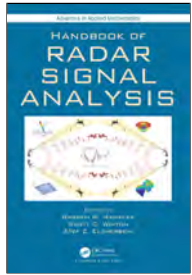
November 2021: 7 x 10: 736pp

Hb: 978-0-367-25257-1: **£170.00**

eBook: 978-0-429-28683-4

\* For full contents and more information, visit: [www.routledge.com/9780367252571](http://www.routledge.com/9780367252571)

## Handbook of Radar Signal Analysis



Edited by **Bassem R. Mahafza, Scott C. Winton and Atef Z. Elsherbeni**

*Series: Advances in Applied Mathematics*

This new handbook on radar signal analysis adopted a deliberate and systematic approach. It uses a clear and consistent level of delivery while maintaining strong and easy to follow mathematical details. The emphasis of this book is on radar signal types and their relevant signal processing.

This handbook serves as a valuable reference to a wide range of audience and the presentation of topics in this handbook takes the reader on a scientific journey whose major landmarks comprise the different radar sub-systems and components. In

this context, the chapters of this book follow the radar signal along this journey from its birth to the end of its life.

Chapman and Hall/CRC

**Market:** Engineering - Electrical

August 2021: 7 x 10: 706pp

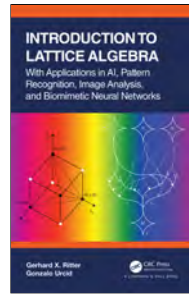
Hb: 978-1-138-06286-3: **£170.00**

eBook: 978-1-315-16140-2

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## Introduction to Lattice Algebra

With Applications in AI, Pattern Recognition, Image Analysis, and Biomimetic Neural Networks



Edited by **Gerhard X. Ritter, Consultant, Gainesville, Florida, USA and Gonzalo Urcid**

This book lays emphasis on two subjects, the first being lattice algebra and the second the practical applications of that algebra. This textbook is intended to be used for a special topics course in artificial intelligence with focus on pattern recognition, multispectral image analysis, and biomimetic artificial neural networks. The book is self-contained and – depending on the student's major – can be used at a senior undergraduate level or a first-year graduate level course. The book is also an ideal self-study guide for researchers and professionals in the above-mentioned disciplines.

Chapman and Hall/CRC

**Market:** Mathematics

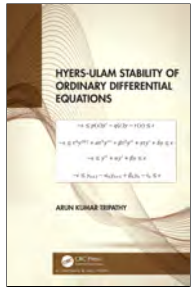
July 2021: 6.14 x 9.21: 424pp

Hb: 978-0-367-72029-2: **£89.99**

eBook: 978-1-003-15424-2

\* For full contents and more information, visit: [www.routledge.com/9780367720292](http://www.routledge.com/9780367720292)

## Hyers-Ulam Stability of Ordinary Differential Equations



Edited by **Arun Kumar Tripathy, Dept of Maths, Sambalpur Univ**

This book discusses new developments in Hyers-Ulam Stability of Ordinary Differential Equations which says that when a solution of differential equation satisfies an inequality in a neighbourhood of origin, then there exists another solution in the same neighbourhood which is very close to the said solution. It undertakes an interdisciplinary, integrative overview of a kind of stability problem unlike the existing so called stability problem for Differential equations and Difference Equations. The book is aimed at graduates and researchers studying stability theory. Researchers working in the field of Mathematical modeling in Biology will also find this book useful.

Chapman and Hall/CRC

**Market:** Mathematics

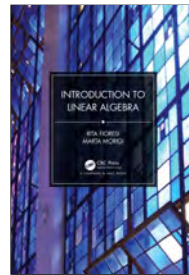
May 2021: 6.14 x 9.21: 228pp

Hb: 978-0-367-63667-8: **£120.00**

eBook: 978-1-003-12017-9

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## Introduction to Linear Algebra



Edited by **Rita Fioresi, Università di Bologna, Italy and Marta Morigi, Università di Bologna, Italy**

Linear algebra provides the essential mathematical tools to tackle all the problems in Science. *Introduction to Linear Algebra* is primarily aimed at students in applied fields (e.g. Computer Science and Engineering), providing them with a concrete, rigorous approach to face and solve various types of problems for the applications of their interest. This book offers a straightforward introduction to linear algebra that requires a minimal mathematical background to read and engage with.

Chapman and Hall/CRC

**Market:** Mathematics

September 2021: 7 x 10: 280pp

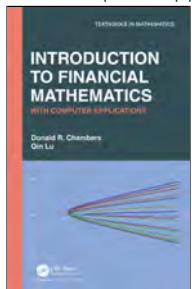
Hb: 978-0-367-62654-9: **£76.99**

eBook: 978-1-003-11960-9

\* For full contents and more information, visit: [www.routledge.com/9780367626549](http://www.routledge.com/9780367626549)

## Introduction to Financial Mathematics

With Computer Applications



Edited by **Donald R. Chambers, Lafayette College, USA and Qin Lu, Lafayette College, USA**

*Series: Textbooks in Mathematics*

This book's primary objective is to educate aspiring finance professionals about mathematics and computation in the context of financial derivatives. The authors offer a balance of traditional coverage and technology to fill the void between highly mathematical books and broad finance books.

A key feature of this book is its focus on applying models in three programming languages –R, Mathematica and EXCEL. Each of the three approaches offers unique advantages. The computer applications are carefully introduced and require little prior programming background.

Chapman and Hall/CRC

**Market:** Science/Mathematics

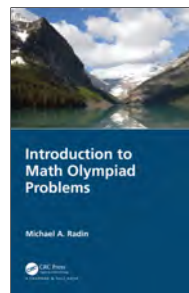
June 2021: 6.14 x 9.21: 580pp

Hb: 978-0-367-41039-1: **£84.99**

eBook: 978-0-367-81442-7

\* For full contents and more information, visit: [www.routledge.com/9780367410391](http://www.routledge.com/9780367410391)

## Introduction to Math Olympiad Problems



Edited by **Michael A. Radin, Rochester Institute of Technology, USA**

This book aims to introduce high school students to all the necessary topics that frequently emerge in international Math Olympiad competitions. In addition to introducing the topics, the book will also provide several repetitive-type guided problems to help develop vital techniques in solving problems correctly and efficiently. The techniques employed in the book will help prepare students for the topics they will typically face in an Olympiad-style event, but also for future college mathematics courses in Discrete Mathematics, Graph Theory, Differential Equations, Number Theory and Abstract Algebra.

Chapman and Hall/CRC

**Market:** Mathematics

July 2021: 6.14 x 9.21: 160pp

Hb: 978-0-367-54482-9: **£56.99**

Pb: 978-0-367-54471-3: **£22.99**

eBook: 978-1-003-08946-9

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## Introduction to Optimization-Based Decision Making

Joao Luis de Miranda

Series: *Chapman & Hall/CRC Series in Operations Research*

This book provides an elementary and self-contained introduction to the basic concepts involved in making decisions in an optimization-based environment. The mathematical level of the text is directed to the post-secondary reader, or university students in the initial years. The pre-requisites are therefore minimal, and necessary mathematical tools are provided as needed. This lean approach is complemented with a problem-based orientation and a methodology of generalization/reduction. In this way, the book is useful for students from STEM fields, economics and enterprise sciences, social sciences and humanities, as well as for the general reader.

Chapman and Hall/CRC

Market: Mathematics

November 2021: 6 x 9: 232pp

Hb: 978-1-138-71216-4: £74.99

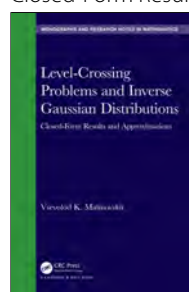
eBook: 978-1-315-20032-3

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## Level-Crossing Problems and Inverse Gaussian Distributions

Closed-Form Results and Approximations



Vsevolod K. Malinovskii

Series: *Chapman & Hall/CRC Monographs and Research Notes in Mathematics*

This book focusses on inverse Gaussian approximation for the distribution of the first level-crossing time in a shifted compound renewal process framework. This approximation, whose name was coined by the author, is a successful competitor of the normal (or Cramér's), diffusion, and Teugels' approximations, being a breakthrough in its conditions and accuracy. Since such approximations underlie numerous applications in risk theory, queueing theory, reliability theory, mathematical theory of dams and inventories, this book is of interest not only to professional mathematicians, but also to physicists, engineers, and

economists.

Chapman and Hall/CRC

Market: Mathematics

July 2021: 6.14 x 9.21: 452pp

Hb: 978-0-367-74029-0: £150.00

eBook: 978-1-003-15761-8

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2nd Edition

## Introduction to Quantum Control and Dynamics



Domenico D'Alessandro

Series: *Advances in Applied Mathematics*

The introduction of control theory in quantum mechanics has created a rich, new interdisciplinary scientific field, which is producing novel insight into important theoretical questions at the heart of quantum physics.

Chapman and Hall/CRC

Market: Mathematical Physics

July 2021: 6.14 x 9.21: 416pp

Hb: 978-0-367-50790-9: £89.99

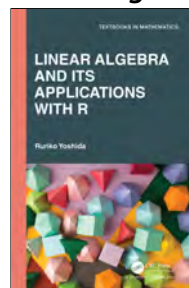
eBook: 978-1-003-05126-8

Prev. Ed Hb: 978-1-584-88884-0

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## Linear Algebra and Its Applications with R



Ruriko Yoshida

Series: *Textbooks in Mathematics*

The book developed from the need to teach a linear algebra course to students focused on data science and bioinformatics programs. The author presents the topics in a traditional course yet offers lectures as well as lab exercises on simulated and empirical data sets. This textbook provides students a theoretical basis which can then be applied to the practical R and Python problems, providing the tools needed for real-world applications.

This book is designed from first principles to demonstrate the importance of linear algebra through working computational examples with R and python including tutorials on how to install R in the Appendix.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 424pp

Hb: 978-0-367-48684-6: £74.99

eBook: 978-1-003-04225-9

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## Inverse Problems with Applications in Science and Engineering



Daniel Lesnic

Driven the advancement of industrial mathematics and the need for impact case studies, *Inverse Problems with Applications in Science and Engineering* thoroughly examines the state-of-the-art of some representative classes of inverse and ill-posed problems for partial differential equations (PDEs). The natural practical applications of this examination arise in heat transfer, electrostatics, porous media, acoustics, fluid and solid mechanics — all of which are addressed in this text.

Chapman and Hall/CRC

Market: Mathematics

November 2021: 6.14 x 9.21: 360pp

Hb: 978-0-367-00198-8: £89.99

eBook: 978-0-429-40062-9

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## Linear Algebra to Differential Equations

J. Vasundhara Devi, Sadashiv G. Deo and Ramakrishna Khandeparkar

This book concentrates on the essential topics necessary for all engineering students in general and computer science branch students, in particular. Specifically, the topics dealt will help the reader in applying linear algebra as a tool. The topics of linear algebra and differential equations are linked by Kronecker products and calculus of matrices. These topics are useful in dealing with linear systems of differential equations and matrix differential equations. The essential concepts dealing with the solutions and their stability are briefly presented to motivate the reader towards further investigation.

Chapman and Hall/CRC

Market: Mathematics

September 2021: 6.14 x 9.21: 416pp

Hb: 978-0-815-36146-6: £110.00

eBook: 978-1-351-01495-3

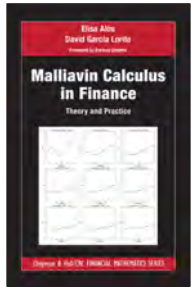
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## Malliavin Calculus in Finance

Theory and Practice



Elisa Alos, Universitat Pompeu Fabra, Spain and David Garcia Lorite

Series: *Chapman and Hall/CRC Financial Mathematics Series*

This book aims to introduce the study of stochastic volatility (SV) models via Malliavin Calculus.

The objective of this book is to offer a bridge between theory and practice. It shows that Malliavin calculus is an easy-to-apply tool that allows us to recover, unify, and generalize several previous results in the literature on stochastic volatility modeling related to the vanilla, the forward, and the VIX implied volatility surfaces. It can be applied to local, stochastic, and also to rough volatilities (driven by a fractional Brownian motion) leading to simple and explicit results.

Chapman and Hall/CRC

Market: Mathematics

July 2021: 6.14 x 9.21: 350pp

Hb: 978-0-367-89344-6: £89.99

eBook: 978-1-003-01868-1

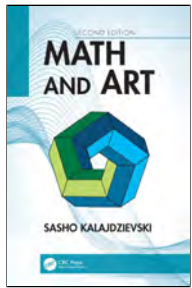
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2nd Edition

## Math and Art

An Introduction to Visual Mathematics



Sasho Kalajdziewski, University of Manitoba, Winnipeg, Canada

This book explores the potential of mathematics to generate visually appealing objects and reveals some of the beauty of mathematics. It includes numerous illustrations, photographs, and art reproductions to demonstrate how mathematics can inspire or generate art.

Sequentially organized according to mathematical maturity level, each chapter covers a cross section of mathematics. For art students, the book stresses an understanding of the mathematical background of relatively complicated yet intriguing visual objects. For science students, it presents various elegant mathematical theories and notions.

Chapman and Hall/CRC

Market: Mathematics

August 2021: 7 x 10: 520pp

Hb: 978-0-367-07613-9: £130.00

Pb: 978-0-367-07611-5: £52.99

eBook: 978-0-429-02160-2

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2nd Edition

## Mathematical Modeling

Models, Analysis and Applications

Sandip Banerjee

This book introduces models of both discrete and continuous systems. This book is aimed at newcomers who desire to learn mathematical modeling, specially students taking a first course in the subject. Beginning with the step-by-step guidance of model formulation, this book equips the reader about modeling with difference equations (discrete models), ODE's, PDE's, delay and stochastic differential equations (continuous models). This book provides interdisciplinary and integrative overview of mathematical modeling, making it a complete textbook for a wide audience.

Chapman and Hall/CRC

Market: Mathematics

November 2021: 6.14 x 9.21: 424pp

Hb: 978-1-138-49594-4: £99.99

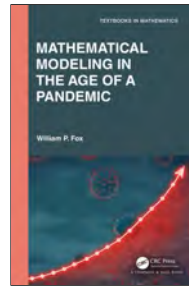
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Prev. Ed Hb: 978-1-439-85451-8

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## Mathematical Modeling in the Age of the Pandemic



William P. Fox

Series: *Textbooks in Mathematics*

This book's purpose is to shed some light on the meaning and interpretations of many of the types of models that are or might be used in the presentation of analysis. Understanding the concepts presented is essential in the entire modeling process of a pandemic. From the virus itself and its infectious rates and deaths rates to explain the process for testing a vaccine or eventually a cure, the author builds, presents, and shows model testing.

Chapman and Hall/CRC

Market: Mathematics

June 2021: 6.14 x 9.21: 174pp

Hb: 978-0-367-70312-7: £155.00

eBook: 978-1-003-14563-9

\* For full contents and more information, visit: [www.routledge.com/9780367703127](http://www.routledge.com/9780367703127)



## Mathematical Analysis and Optimization for Economists

Michael J. Panik, University of Hartford, USA

In *Mathematical Analysis and Optimization for Economists*, the author aims to introduce students of economics to the power and versatility of traditional as well as contemporary methodologies in mathematics and optimization theory; and, illustrates how these techniques can be applied in solving microeconomic problems. Suitable for advanced undergraduates and first-year graduate students, this text contains numerous detailed example problems. These have been classroom-tested over the years when the author was actively teaching at the University of Hartford, and solutions can be downloaded from the CRC Press website.

Chapman and Hall/CRC

Market: Mathematics

August 2021: 8.25 x 11: 348pp

Hb: 978-0-367-75901-8: £74.99

eBook: 978-1-003-16449-4

\* For full contents and more information, visit: [www.routledge.com/9780367759018](http://www.routledge.com/9780367759018)



## Mathematics of The Big Four Casino Table Games

Blackjack, Baccarat, Craps, & Roulette



Mark Bollman, Albion College, Albion, Michigan, USA

Mathematics is the basis of casino games, which are the bedrock of a \$100 billion/year industry. *Mathematics of the Big Four Casino Table Games: Blackjack, Baccarat, Craps, & Roulette* takes an in-depth look at the four biggest table games in casinos: blackjack, baccarat, craps, and roulette. It guides readers through the mathematical principles that underpin these games and their different variations, providing insights that will be of huge interest to gamblers, casino managers, researchers, and students of mathematics.

Chapman and Hall/CRC

Market: Mathematics

August 2021: 6.14 x 9.21: 360pp

Hb: 978-0-367-74229-4: £68.99

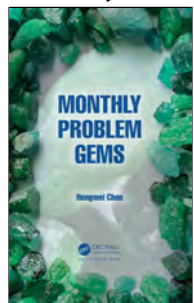
Pb: 978-0-367-74090-0: £26.99

eBook: 978-1-003-15668-0

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## Monthly Problem Gems



Hongwei Chen

This book is an outgrowth of a collection of sixty-two problems offered in the *The American Mathematical Monthly* (AMM) the author has worked over the last two decades.

A K Peters/CRC Press

Market: Mathematics

July 2021: 6.14 x 9.21: 324pp

Hb: 978-0-367-76678-8: **£150.00**

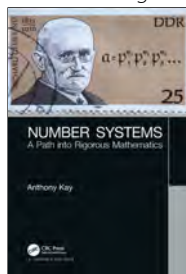
Pb: 978-0-367-76677-1: **£22.99**

eBook: 978-1-003-16806-5

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## Number Systems

A Path into Rigorous Mathematics



Anthony Kay

This book aims to introduce number systems to an undergraduate audience in a way that emphasises the importance of rigour, and with a focus on providing detailed but accessible explanations of theorems and their proofs. The book continually seeks to build upon students' intuitive ideas of how numbers and arithmetic work, and to guide them towards the means to embed this natural understanding into a more structured framework of understanding.

Chapman and Hall/CRC

Market: Mathematics

September 2021: 7 x 10: 316pp

Hb: 978-0-367-18065-2: **£130.00**

Pb: 978-0-367-18061-4: **£52.99**

eBook: 978-0-429-05935-3

\* For full contents and more information, visit: [www.routledge.com/9780367180652](http://www.routledge.com/9780367180652)

## Noncommutative Polynomial Algebras of Solvable Type and Their Modules

Basic Constructive-Computational Theory and Methods

Huishi Li, Hainan University, Republic of China

Series: *Chapman & Hall/CRC Monographs and Research Notes in Mathematics*

*Noncommutative Polynomial Algebras of Solvable Type and Their Modules* is the first book to systematically introduce the basic constructive-computational theory and methods developed for investigating solvable polynomial algebras and their modules.

This book is perfectly suited to researchers and postgraduates researching noncommutative computational algebra and would also be an ideal resource for teaching an advanced lecture course.

Chapman and Hall/CRC

Market: Mathematics

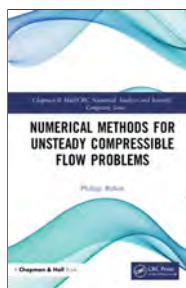
November 2021: 6.14 x 9.21: 232pp

Hb: 978-1-032-07988-2: **£140.00**

eBook: 978-1-003-21319-2

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## Numerical Methods for Unsteady Compressible Flow Problems



Philipp Birken

Series: *Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series*

This book is written to give both mathematicians and engineers an overview of the state of the art in the field, as well as of new developments. The focus is on methods for the compressible Navier-Stokes equations, the solutions of which can exhibit shocks, boundary layers and turbulence. The idea of the text is to explain the important ideas to the reader, while giving enough detail and pointers to literature to facilitate implementation of methods and application of concepts.

The book covers high order methods in space, such as

Discontinuous Galerkin methods, and high order methods in time, in particular implicit ones.

Chapman and Hall/CRC

Market: Mathematics

July 2021: 6.14 x 9.21: 246pp

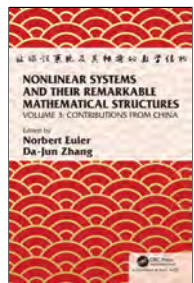
Hb: 978-0-367-45775-4: **£120.00**

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## Nonlinear Systems and Their Remarkable Mathematical Structures

Volume 3, Contributions from China



Edited by Norbert Euler, Lulea University of Technology, Lulea and Da-jun Zhang

The third volume in this sequence of books consists of a collection of contributions that aims to describe the recent progress in nonlinear differential equations and nonlinear dynamical systems (both continuous and discrete). *Nonlinear Systems and Their Remarkable Mathematical Structures: Volume 3, Contributions from China*, just like the first two volumes, consists of contributions by world-leading experts in the subject of nonlinear systems, but in this instance only featuring contributions by leading Chinese scientists who also work in China (in some cases in collaboration with western scientists).

Chapman and Hall/CRC

Market: Mathematics

September 2021: 7 x 10: 512pp

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## Observability and Mathematics

Fluid Mechanics, Solutions of Navier-Stokes Equations, and Modeling

Boris Khots

Series: *Advances in Applied Mathematics*

The author approaches an old classic problem - the existence of solutions of Navier-Stokes eqs. The main objective is to model and derive of equation of continuity, Euler equation of fluid motion, energy flux equation, Navier-Stokes eqs from the observer point of view and solve classic problem for this interpretation of fluid motion laws.

Observability in maths were developed by the author based on denial of infinity idea. He introduces observers into arithmetic, and arithmetic becomes dependent on observers. And after that the basic maths also become dependent on observers.

Chapman and Hall/CRC

Market: Applied Mathematics

November 2021: 6.14 x 9.21: 232pp

Hb: 978-1-032-00813-4: **£89.99**

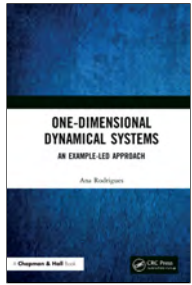
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## One-Dimensional Dynamical Systems

An Example-Led Approach



**Ana Rodrigues**, University of Exeter, UK  
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Features

Example-driven approach Suitable as supplementary reading for a graduate or advanced undergraduate course in dynamical systems.

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August 2021: 6.14 x 9.21: 118pp  
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## Optimal Decision Making in Operations Research and Statistics

Methodologies and Applications



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The book provides insights in the decision-making for implementing strategies in various spheres of real-world issues. It integrates optimal policies in various decision-making problems and serves as a reference for researchers and industrial practitioners. Furthermore, the book provides sound knowledge of modelling of real-world problems and solution procedure using the various optimisations and statistical techniques for making optimal decisions. The book is meant for teachers, students, researchers and industrialists who are working in the field of materials science, especially operations research and

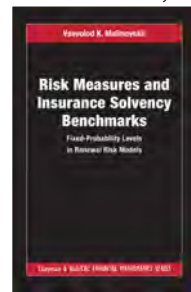
applied statistics.

CRC Press  
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Hb: 978-0-367-61875-9: **£180.00**  
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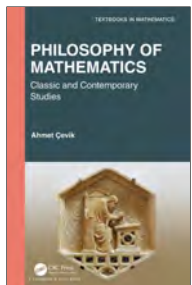
The formal prerequisite for this book is a good background in analysis. The desired prerequisite is some degree of probability training, but someone with knowledge of the classical real-variable theory, including asymptotic methods, will also find this book interesting.

Chapman and Hall/CRC  
**Market:** Mathematics  
July 2021: 6.14 x 9.21: 340pp  
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November 2021: 6.14 x 9.21: 368pp  
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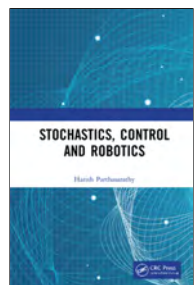
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Harish Parthasarathy

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CRC Press

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June 2021: 6.14 x 9.21: 490pp

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Chapman and Hall/CRC

**Market:** Mathematics

July 2021: 7 x 10: 444pp

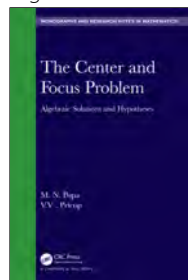
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September 2021: 6.14 x 9.21: 240pp

Hb: 978-1-032-01725-9: **£140.00**

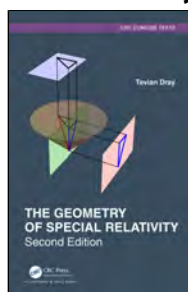
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Chapman and Hall/CRC

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June 2021: 6.14 x 9.21: 196pp

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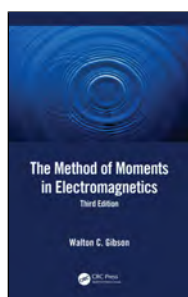
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Walton C. Gibson, Tripoint Industries Inc., Harvest, Alabama, USA

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in compressed form.

CRC Press

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July 2021: 6.14 x 9.21: 510pp

Hb: 978-0-367-36506-6: **£170.00**

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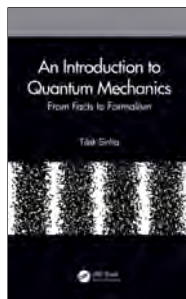
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Market: Physics

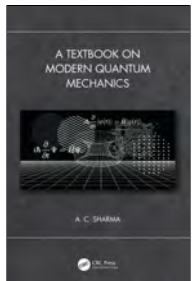
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May 2021: 6.14 x 9.21: 294pp

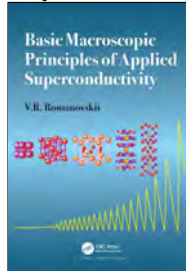
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Market: Physics

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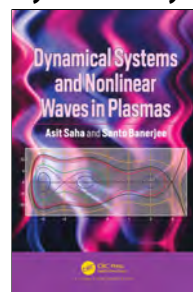
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CRC Press

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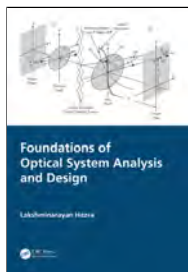
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CRC Press

Market: Physics

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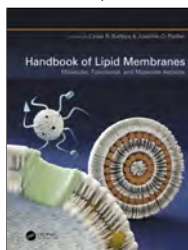
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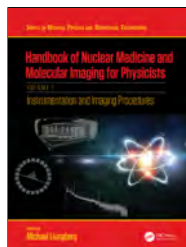
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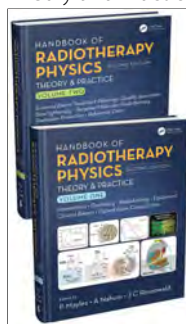
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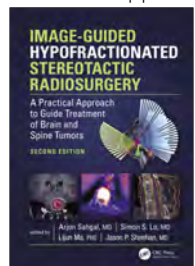
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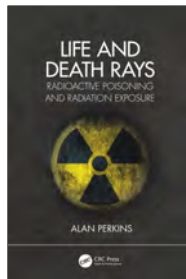
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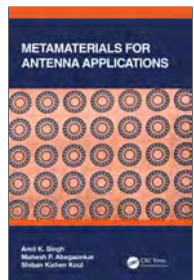
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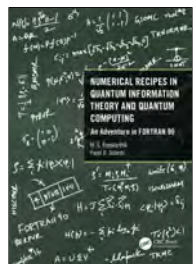
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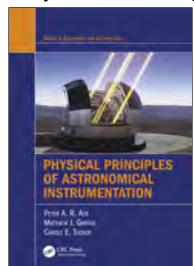
This book focuses on the first two steps of this process with chapters exploring topics such as chemical element abundances; galaxies, galactic magnetic fields and cosmic rays; galactic chemical evolution. Despite its interdisciplinary nature, this book remains accessible to nonexperts, and would be a valuable companion for both experts and laypeople.

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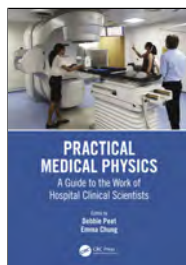
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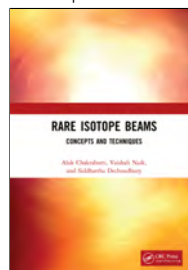
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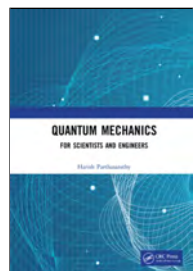
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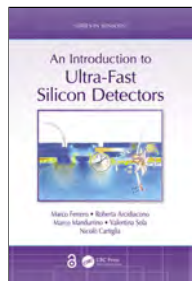
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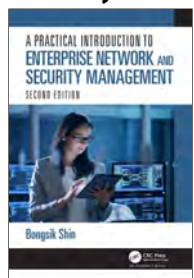
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## A Practical Introduction to Enterprise Network and Security Management



Bongsik Shin

A Practical Introduction to Enterprise Network and Security Management is written for people who are self-studying or studying information systems or computer science in the classroom setting. The book provides a balanced understanding of introductory and fairly advanced subjects on both computer networking and cybersecurity. Although much focus is to teach technical concepts, managerial issues related to enterprise network and security planning and design are explained from the practitioner's perspective.

Auerbach Publications

Market: IT - Network Security

July 2021: 7 x 10: 445pp

Hb: 978-0-367-64251-8: £99.99

Pb: 978-1-032-04802-4: £44.99

eBook: 978-1-003-12369-9

Prev. Ed Hb: 978-1-498-78797-0

\* For full contents and more information, visit: [www.routledge.com/9780367642518](http://www.routledge.com/9780367642518)

## Advanced Trends in ICT for Innovative Business Management



Edited by Katarzyna Szymczyk, Czestochowa University of Technology Faculty of Management al. Armii Krajowej 19B Czestochowa 42-200 Poland and Ibrahim M. M. El Emry, King Abdulaziz University, Jeddah, Saudi Arabia

This book contains a collection of scientific chapters which address emerging trends in IT and telecommunications, and the issues which accompany them in business. It addresses issues in cyber applications, ICT solutions and innovative cyber know-hows, and demonstrates how high-tech IT communications resources can be used to improve business production, sales and service strategies, supply chains and logistics.

CRC Press

June 2021: 7 x 10: 298pp

Hb: 978-0-367-46062-4: £95.99

eBook: 978-1-003-02893-2

\* For full contents and more information, visit: [www.routledge.com/9780367460624](http://www.routledge.com/9780367460624)

## An In-Depth Guide to Mobile Device Forensics

Chuck Easttom

Mobile devices are ubiquitous. Therefore, mobile device forensics is absolutely critical. Whether it is civil or criminal investigations, being able to extract evidence from a mobile device is critical. This book covers technical details of mobile devices and transmissions as well as forensic methods for extracting evidence. There are books on specific issues like Android Forensics or iOS forensics. But there is not currently a book that covers all the topics this book will. Furthermore, mobile device forensics is the most common topic I am asked to teach to law enforcement, it is such a critical skill.

CRC Press

Market: Cybersecurity

October 2021: 6.14 x 9.21: 216pp

Hb: 978-0-367-63298-4: £110.00

Pb: 978-0-367-63300-4: £41.99

eBook: 978-1-003-11871-8

\* For full contents and more information, visit: [www.routledge.com/9780367632984](http://www.routledge.com/9780367632984)

## An Integrated Approach to Home Security and Safety Systems

Sonali Goyal and Neera Batra

This book provides an integrated solution for security and safety in the home, covering both assistance in health monitoring and safety from strangers/intruders who want to enter home with harmful intentions. It defines a system whereby recognition of a person/stranger at the door is done using three modules: Face Recognition, Voice Recognition and Similarity Index. These three modules are taken together to provide a percentage likelihood that the individual is in the "known" or "unknown" category. The system can also continuously monitor the health parameters of a vulnerable person living alone at home and aid them in calling for help in an emergency.

CRC Press

Market: IT - Security

October 2021: 6.14 x 9.21: 196pp

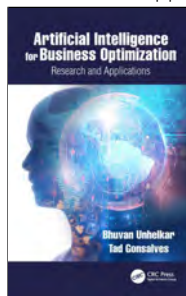
Hb: 978-0-367-63841-2: £99.99

eBook: 978-1-003-12093-3

\* For full contents and more information, visit: [www.routledge.com/9780367638412](http://www.routledge.com/9780367638412)

## Artificial Intelligence for Business Optimization

Research and Applications



Bhuvan Unhelkar, University of South Florida and Tad Gonsalves

*Artificial Intelligence for Business Optimization: Research and Applications* is primarily a business book that discusses the research and associated practical application of Artificial Intelligence (AI) and Machine Learning (ML) in order to achieve Business Optimization (BO). AI comprises wide range of technologies, databases algorithms and devices. This book aims for a holistic approach to AI by focusing on developing business strategies that will not only automate but also optimize business functions, processes and people-behavior.

CRC Press

Market: Business Technology

August 2021: 6.14 x 9.21: 324pp

Hb: 978-0-367-63836-8: £76.99

eBook: 978-1-003-12092-6

\* For full contents and more information, visit: [www.routledge.com/9780367638368](http://www.routledge.com/9780367638368)

## Artificial Intelligence Theory, Models, and Applications



Edited by P. Kaliraj and T. Devi

This book covers advances that have emerged over the last two decades of AI research. Examining both theoretical and practical aspects, it presents applications of AI in such various domains as policy management, medical imaging, agriculture, technology education, business, and healthcare. It also covers machine learning techniques.

Auerbach Publications

Market: Artificial Intelligence

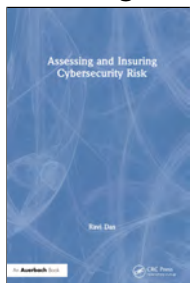
October 2021: 6.14 x 9.21: 400pp

Hb: 978-1-032-00809-7: £110.00

eBook: 978-1-003-17586-5

\* For full contents and more information, visit: [www.routledge.com/9781032008097](http://www.routledge.com/9781032008097)

## Assessing and Insuring Cybersecurity Risk



Ravi Das

The cyber threat landscape is changing constantly and corporations are looking to measure their level of risk and deciding how to insure against it. But this concept is still quite new, and both sides of the equation, the insurance carriers and the business entities that need them are still trying to understand this. For example, the insurance industry only uses qualitative measures in gauging the risk of a potential policy holder, and thus, they are prone to making subjective and discriminatory decisions. This book helps IT security team members and managers to assess cyber risk levels and insurance needs.

Auerbach Publications

Market: IT Security

October 2021: 6.14 x 9.21: 168pp

Hb: 978-1-032-11163-6: **£130.00**

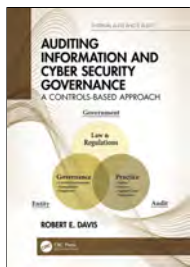
Pb: 978-0-367-90307-7: **£52.99**

eBook: 978-1-003-02368-5

\* For full contents and more information, visit: [www.routledge.com/9781032111636](http://www.routledge.com/9781032111636)

## Auditing Information and Cyber Security Governance

A Controls-Based Approach



Robert E. Davis

Series: *Internal Audit and IT Audit*

This book presents a methodological approach in the context of normative decision theory constructs and concepts with appropriate reference to standards and the respective guidelines. Normative decision theory attempts to establish a rational framework for choosing between alternative courses of action when the outcomes resulting from the selection are uncertain. Through the methodological application, decision theory techniques can provide objectives determination, interaction assessments, performance estimates, and organizational analysis. A normative model prescribes what should exist according to

an assumption or rule.

CRC Press

Market: IT Security & Audit

September 2021: 7 x 10: 306pp

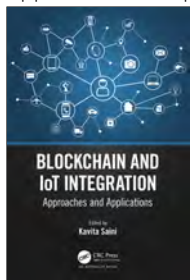
Hb: 978-0-367-56850-4: **£59.99**

eBook: 978-1-003-09967-3

\* For full contents and more information, visit: [www.routledge.com/9780367568504](http://www.routledge.com/9780367568504)

## Blockchain and IoT Integration

Approaches and Applications



Edited by Kavita Saini

IoT refers to the interconnection of smart devices and collect data and make intelligent decisions. It is embedded in everyday objects, enabling them to send and receive data. A lack of intrinsic security measures makes IoT vulnerable to privacy and security threats. Blockchain, an encrypted, distributed computer filing system designed to allow the creation of tamper-proof records. The merger of Internet of Things (IoT) and blockchain technology is a step towards creating a verifiable, secure and permanent method of recording data processed by "smart" machines. This book explores the platforms and applications of blockchain-enabled IoT.

Auerbach Publications

Market: Information Security

October 2021: 6.14 x 9.21: 208pp

Hb: 978-0-367-55595-5: **£100.00**

eBook: 978-1-003-09421-0

\* For full contents and more information, visit: [www.routledge.com/9780367555955](http://www.routledge.com/9780367555955)

## Blue Shark Team-Building

Leading High-Performance Teams during a Crisis



Rizwan Amin Sheikh

The book shows how to create high-performance teams and lead them successfully through crisis situations. It demonstrates how Daniel Goleman's emotional intelligence model and Bruce Tuckman's team-build model (forming, storming, norming, and performing) were applied to form a Blue Shark Team that was a success story during the COVID-19 pandemic. The Blue Shark Model can be applied to any emergency or global crisis for building teams in industries across the spectrum, including I.T., healthcare, construction, manufacturing, transportation, and financial services. The book is filled with practical insight, tips, and real-world examples.

Auerbach Publications

Market: Project Management

October 2021: 6.14 x 9.21: 256pp

Hb: 978-1-032-08105-2: **£94.99**

Pb: 978-1-032-06295-2: **£42.99**

eBook: 978-1-003-21671-1

\* For full contents and more information, visit: [www.routledge.com/9781032081052](http://www.routledge.com/9781032081052)

## Explainable Artificial Intelligence for Smart Cities

Edited by Mohamed Lahby, Utku Kose and Akash Kumar Bhoi

The objective of this book is to focus on Explainable Artificial Intelligence (XAI) in smart city development. This book provides a timely, global reference source about cutting edge research efforts to ensure the XAI factor in smart city-oriented developments. It includes both positive and negative outcomes as well as future insights and both societal and technical aspects of XAI based smart city research efforts.

CRC Press

Market: IT - Smart Cities

November 2021: 7 x 10: 320pp

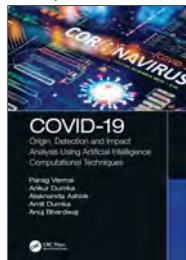
Hb: 978-1-032-00112-8: **£89.99**

eBook: 978-1-003-17277-2

\* For full contents and more information, visit: [www.routledge.com/9781032001128](http://www.routledge.com/9781032001128)

## COVID-19

Origin, Detection and Impact Analysis Using Artificial Intelligence Computational Techniques



Edited by Parag Verma, Ankur Dumka, Alaknanda Ashok, Pantnagar, College of Technology, G.B. Pant University of Agriculture and Technology, Rudrapur, Uttarakhand, India, Amit Dumka and Anuj Bhardwaj

This book will highlight progress in terms of Virus Biology, Infection Detection, Prevention, and Control, along with Screening, Testing, and Detection Techniques that will provide learners and researchers (basic to advanced) with the most innovative computer-driven methodologies for the fight against COVID-19. In addition, this book will also cover the Pre and Post Impact of on COVID-19 Pandemic Crisis that will definitely provide useful content to the researchers to think broadly about

the analytical areas affected by COVID-19. That ultimately shows different paths to the same destination that are to understand COVID-19 pandemic nature and how to avoid it.

CRC Press

Market: AI in Health

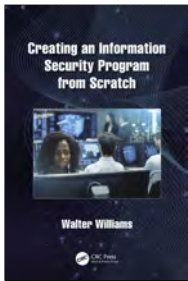
August 2021: 7 x 10: 528pp

Hb: 978-0-367-67466-3: **£110.00**

eBook: 978-1-003-13141-0

\* For full contents and more information, visit: [www.routledge.com/9780367674663](http://www.routledge.com/9780367674663)

## Creating an Information Security Program from Scratch



**Walter Williams**

While most books targeted at information security professionals explore specific subjects with deep expertise, this book will explore the depth and breadth of the field. Instead of exploring a technology such as cloud security or a technique such as risk analysis, this will place those into the larger context of how to meet an organization's needs, how to prioritize, and what success looks like. Guides to maturation of practice is offered, along with pointers for each topic on where to go for an in-depth exploration of each topic.

CRC Press

**Market:** Information Security  
September 2021: 6.14 x 9.21: 226pp  
Hb: 978-0-367-55464-4: **£120.00**  
Pb: 978-0-367-55465-1: **£45.00**  
eBook: 978-1-003-09368-8

\* For full contents and more information, visit: [www.routledge.com/9780367554644](http://www.routledge.com/9780367554644)

## Cybersecurity Issues in Emerging Technologies



**Leandros Maglaras and Ioanna Kantzavelou**

This book contains eleven chapters dealing with different Cybersecurity Issues in Emerging Technologies. The issues that are discussed and analyzed include smart connected cars, unmanned ships, 5G/6G connectivity, blockchain, agile incident response, hardware assisted security, ransomware attacks, hybrid threats and cyber skills gap. Both theoretical analysis and experimental evaluation of state-of-the-art techniques are presented and discussed. Prospective readers can be benefitted in understanding the future implications of novel technologies and proposed security solutions and techniques.

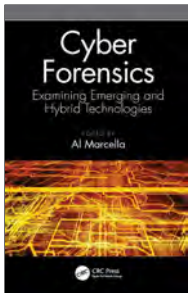
CRC Press

**Market:** Cybersecurity  
October 2021: 6.14 x 9.21: 232pp  
Hb: 978-0-367-62617-4: **£69.99**  
eBook: 978-1-003-10995-2

\* For full contents and more information, visit: [www.routledge.com/9780367626174](http://www.routledge.com/9780367626174)

## Cyber Forensics

Examining Emerging and Hybrid Technologies



**Edited by Al Marcella**

This book moves beyond the typical, technical approach to discussing cyber forensics processes and procedures. Instead, the authors examine how cyber forensics can be applied to identifying, collecting, and examining evidential data from emerging and hybrid technologies, while taking steps to proactively manage the influence and impact, as well as the policy and governance aspects of these technologies and their effect on business operations.

CRC Press

**Market:** Digital Forensics  
September 2021: 6 x 9: 336pp  
Hb: 978-0-367-52418-0: **£100.00**  
Pb: 978-0-367-52424-1: **£39.99**  
eBook: 978-1-003-05788-8

\* For full contents and more information, visit: [www.routledge.com/9780367524180](http://www.routledge.com/9780367524180)

## Deep Learning for Internet of Things Infrastructure

Edited by **Uttam Ghosh, Mamoun Alazab, Ali Kashif Bashir and Al-Sakib Khan Pathan**, International Islamic University Malaysia, Kuala Lumpur

This book promotes and facilitates exchanges of research knowledge and findings across different disciplines on the design and investigation of deep learning (DL)-based data analytics of IoT (Internet of Things) infrastructures. It addresses the emerging trends and issues on IoT systems and services across various application domains. It investigates the challenges posed by the implementation of deep learning on IoT networking models and services. It provides fundamental theory, model, and methodology in interpreting, aggregating, processing and analyzing data for intelligent DL enabled IoT.

CRC Press

**Market:** Networking  
August 2021: 6.14 x 9.21: 270pp  
Hb: 978-0-367-45733-4: **£99.99**  
eBook: 978-1-003-03217-5

\* For full contents and more information, visit: [www.routledge.com/9780367457334](http://www.routledge.com/9780367457334)

## Cyber Security in Mergers & Acquisitions

The Industry Handbook



**Rajinder Tumber**

*Cyber Security in Mergers & Acquisitions* answers the question "How do I assess the maturity of an organisation's cyber security during the pre-deal phase, using security best practice?". This industry handbook is directed to professionals involved in M&A deals, as well as university students interested in M&A, private equity and cyber security. It adheres to cyber security best practice, and analyses key elements in the due diligence process, such as governance, risk management, supply chain assurance, regulatory compliance, cyber insurance, cyber threat intelligence, incident management, disaster recovery, and much more.

CRC Press

**Market:** Cybersecurity / Business  
July 2021: 6.14 x 9.21: 252pp  
Hb: 978-0-367-67678-0: **£54.99**  
eBook: 978-1-003-13231-8

\* For full contents and more information, visit: [www.routledge.com/9780367676780](http://www.routledge.com/9780367676780)

## Designing Secure Systems



**Michael Melone**

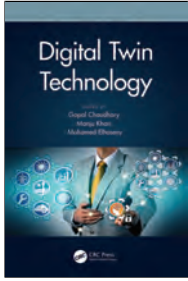
*Designing Secure Systems* takes a theory-based approach to concepts underlying all forms of systems, from padlocks to phishing to enterprise software architecture. In this book, we will discuss similarities in how a weakness in one part of a process enables vulnerability to bleed into another by applying standards and frameworks used in the cybersecurity world to assess the system as a complete process including people, processes, and technology.

CRC Press

**Market:** IT Security  
September 2021: 6.14 x 9.21: 200pp  
Hb: 978-0-367-70001-0: **£59.99**  
eBook: 978-1-003-14418-2

\* For full contents and more information, visit: [www.routledge.com/9780367700010](http://www.routledge.com/9780367700010)

## Digital Twin Technology



Edited by **Gopal Chaudhary**, Bharati Vidyapeeth University, India, **Manju Khari**, Assistant Professor, GGSIP University, India and **Mohamed Elhoseny**, Mansoura University, Egypt. Organizations obtain better insights on their product performance through the implementation of Digital Twins, and the applications of the technology are frequently in sectors such as manufacturing, automobile, retail, health care, smart cities, industrial IoT, etc. This book explores the latest developments and covers the significant challenges, issues, and advances in Digital Twin Technology. It will be an essential resource for anybody involved in related industries, as well as anybody interested in learning more about this nascent technology.

CRC Press

**Market:** Information Technology

October 2021: 6.14 x 9.21: 256pp

Hb: 978-0-367-67795-4: **£99.99**

eBook: 978-1-003-13286-8

\* For full contents and more information, visit: [www.routledge.com/9780367677954](http://www.routledge.com/9780367677954)

## Essential Enterprise Blockchain Concepts and Applications



Edited by **Kavita Saini**, Pethuru Raj Chelliah and **Deepak Kumar Saini**

Companies are adapting blockchain for improving such sectors as supply chain and other transactions in a secure and innovative way. Blockchain is being combined with existing technologies like cloud computing, Big Data and IoT to make revolutionary outcomes. This book explains essential research in enterprise application and technology. Unlike other blockchain books focused only on financial application, this book is a resource for researchers and practitioners who are looking for secure, viable, low-cost and workable applications. The proposed book provides concepts and research to rethink how to incorporate blockchain with existing technology.

Auerbach Publications

**Market:** Information Security

June 2021: 6.14 x 9.21: 288pp

Hb: 978-0-367-56488-9: **£74.99**

eBook: 978-1-003-09799-0

\* For full contents and more information, visit: [www.routledge.com/9780367564889](http://www.routledge.com/9780367564889)

## Edge Computing and Capability-Oriented Architecture



Edited by **Haishi Bai** and **Boris Scholl**

This book is for everyone who is interested in understanding what ubiquitous and edge computing means, why it is growing in importance and its opportunities to you as a technologist or decision maker. We will cover the broad spectrum of edge environments, their challenges and how you can address them as a developer or operator. This book will conclude with the introduction of a new architectural paradigm called capability-based architectures which takes into consideration of the capabilities provided by an edge environment.

CRC Press

**Market:** Networks

August 2021: 6.14 x 9.21: 176pp

Hb: 978-0-367-54981-7: **£72.99**

eBook: 978-1-003-09145-5

\* For full contents and more information, visit: [www.routledge.com/9780367549817](http://www.routledge.com/9780367549817)

## It's Your Digital Life

Edited by **Giri Govindarajulu**, **Shyam Sundar Ramaswami** and **Shriram K. Vasudevan**

This book intends to develop cyber awareness and technical knowledge in anyone who is interested in technology, through looking at subjects and experiences the average person will have come into contact with in their life. This book aims to provide a complete and comprehensive analysis, techno inputs, and case studies to the readers to build their awareness and knowledge, but in a meaningful way which will stay relevant.

CRC Press

**Market:** Information Technology

September 2021: 6.14 x 9.21: 248pp

Hb: 978-0-367-70003-4: **£99.99**

Pb: 978-0-367-70004-1: **£42.99**

eBook: 978-1-003-14419-9

\* For full contents and more information, visit: [www.routledge.com/9780367700034](http://www.routledge.com/9780367700034)

## Essential Architecture and Principles of Systems Engineering

Edited by **C.E. Dickerson** and **Siyuan Ji**

This book is for everyone interested in systems and the modern practice of engineering. The revolution in engineering and systems that has occurred since *Architecture and Principles of Systems Engineering (2009)* has led to an expansive advancement of systems engineering tools and languages over the past decade. A new age of information intensive complex systems has arrived with new challenges in a global business market. Science and information technology must now converge into a cohesive multidisciplinary approach to the engineering of systems if products and services are to be useful and competitive.

CRC Press

**Market:** Engineering - General

September 2021: 6.14 x 9.21: 266pp

Hb: 978-1-138-55017-9: **£100.00**

Pb: 978-1-032-10096-8: **£42.99**

eBook: 978-1-003-21363-5

\* For full contents and more information, visit: [www.routledge.com/9781138550179](http://www.routledge.com/9781138550179)

## Knowledge Management in the Development of Data-Intensive Systems



Edited by **Ivan Mistrík**, **Matthias Galster**, **Bruce R. Maxim** and **Bedir Tekinerdogan**

The advent of big data and software-intensive systems utilizing big data opens a new area of growth for innovation and software development. Accordingly, software engineers need to enhance traditional software development processes, practices, and techniques. This can be done by including explicit knowledge construction and management in software development and by supporting system design and development as a process of social construction of shared knowledge. This edited book explores the application of established software engineering practices to developing big data systems, enhanced with

dedicated knowledge management during software development.

Auerbach Publications

**Market:** Software Engineering

June 2021: 7 x 10: 342pp

Hb: 978-0-367-43078-8: **£99.99**

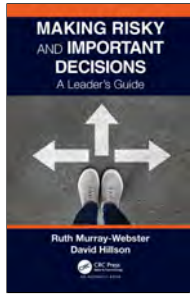
eBook: 978-1-003-00118-8

\* For full contents and more information, visit: [www.routledge.com/9780367430788](http://www.routledge.com/9780367430788)



## Making Risky and Important Decisions

A Leader's Guide



Ruth Murray-Webster and David Hillson

This executive's guide breaks down complexity surrounding risk management, discusses risk-related influences when making decisions, and provides practical help to improve decision-making processes. The book explains what influences executives in identifying risks and in making decisions under uncertainty. It helps business leaders break habits that harm the decision-making process so they can manage risk more effectively.

Auerbach Publications

Market: Management

June 2021: 6.14 x 9.21: 148pp

Hb: 978-1-032-01078-6: £67.99

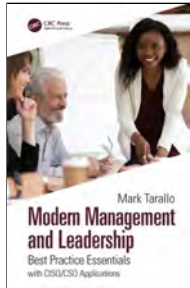
Pb: 978-0-367-70234-2: £26.99

eBook: 978-1-003-14513-4

\* For full contents and more information, visit: [www.routledge.com/9781032010786](http://www.routledge.com/9781032010786)

## Modern Management and Leadership

Best Practice Essentials with CISO/CSO Applications



Mark Tarallo

Series: *Internal Audit and IT Audit*

In one modest-sized volume, this book offers three valuable sets of knowledge. It provides best practice guidance on virtually every large-scale task a modern manager may be involved in—from recruiting and hiring to onboarding and leading teams, and from employee engagement and retention to performance management and working with difficult employees.

The book also explains the essential concepts and practice of a range of effective leadership styles—including (but not limited to) servant leadership, crisis leadership, change agent leadership, and diversity and inclusion leadership.

CRC Press

Market: Management

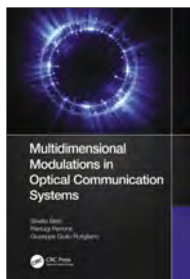
July 2021: 6.14 x 9.21: 222pp

Hb: 978-0-367-55891-8: £57.99

eBook: 978-1-003-09562-0

\* For full contents and more information, visit: [www.routledge.com/9780367558918](http://www.routledge.com/9780367558918)

## Multidimensional Modulations in Optical Communication Systems



Silvello Betti, University of Rome Tor Vergata Department of Electronic Engineering Via Del Politecnico, 1, 00133,

Pierluigi Perrone, University of Rome Tor Vergata Department of Electronic Engineering Via Del Politecnico, 1, 00133 and Giuseppe Giulio Rutigliano

The book provides a very detailed analysis of the novel possibilities offered to the telecommunication engineer in designing tomorrow's network. Following this approach, the main emphasis is placed on novel technologies and innovative optical modulations.

CRC Press

August 2021: 6.14 x 9.21: 132pp

Hb: 978-0-367-43333-8: £49.99

eBook: 978-1-003-00247-5

\* For full contents and more information, visit: [www.routledge.com/9780367433338](http://www.routledge.com/9780367433338)

## Nanoelectronic Devices for Hardware and Software Security

Edited by Arun Kumar Singh and Balwinder Raj

Series: *Security, Privacy, and Trust in Mobile Communications*

This book has comprehensive coverage of the principles, basic concepts, structure, modelling, practices, and circuit applications of nanoelectronics in hardware/software security. It will also cover the future research directions in this domain. In this evolving era nanotechnology is converting semiconductor devices dimensions from micron technology to nanotechnology. Nanoelectronics would be the key enabler for innovation in nanoscale devices, circuits and systems.

CRC Press

Market: IT - Security

November 2021: 7 x 10: 312pp

Hb: 978-0-367-64542-7: £99.99

eBook: 978-1-003-12664-5

\* For full contents and more information, visit: [www.routledge.com/9780367645427](http://www.routledge.com/9780367645427)

## Next Generation Wireless Terahertz Communication Networks



Edited by Saim Ghafoor, Mubashir Husain Rehmani and Alan Davy

This book provide insights on Terahertz communication networks. It highlights the application areas of Terahertz band, communication layers unique characteristics and design, new protocol requirements for different applications, and opportunities and challenges for researchers. It also covers the state-of-the-art literature and survey on different communication aspects of Terahertz band communication networks from channel model to network layer operations and also cover the novel techniques and protocols to address the challenges for different Terahertz applications.

CRC Press

Market: IT Networks

August 2021: 7 x 10: 530pp

Hb: 978-0-367-43072-6: £110.00

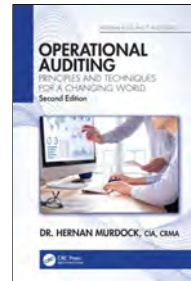
eBook: 978-1-003-00114-0

\* For full contents and more information, visit: [www.routledge.com/9780367430726](http://www.routledge.com/9780367430726)

2nd Edition

## Operational Auditing

Principles and Techniques for a Changing World



Hernan Murdock, Murdock Global Advisors, Wayland, Massachusetts, USA

Series: *Internal Audit and IT Audit*

Operational Auditing: Principles and Techniques for a Changing World, 2nd edition, explains the proven approaches and essential procedures to perform risk-based operational audits. It shows how to effectively evaluate the relevant dynamics associated with programs and processes, including operational, strategic, technological, financial and compliance objectives and risks. This book merges traditional internal audit concepts and practices with contemporary quality control methodologies, tips, tools and techniques.

CRC Press

Market: IT - Security & Auditing

July 2021: 7 x 10: 378pp

Hb: 978-0-367-56236-6: £59.99

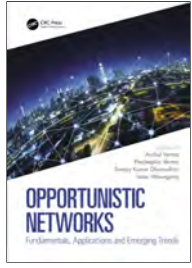
eBook: 978-1-003-09693-1

Prev. Ed Hb: 978-1-498-74639-7

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## Opportunistic Networks

Fundamentals, Applications and Emerging Trends



Edited by Anshul Verma, Pradeepika Verma, Sanjay Kumar Dhurandher and Isaac Woungang

This book provides theoretical, algorithmic, simulation, and implementation-based research developments related to fundamentals, applications, and emerging research trends in opportunistic networks. The book follows a theoretical approach to describe fundamentals to the beginners and incorporates a practical approach depicting the implementation of real-life applications to intermediate and advanced readers. This book is beneficial for academicians, researchers, developers, and engineers who work in or are interested in the fields related to opportunistic networks, delay tolerant networks, and

intermittently connected ad-hoc networks.

CRC Press

Market: IT - Networks

August 2021: 7 x 10: 330pp

Hb: 978-0-367-67730-5: £110.00

eBook: 978-1-003-13258-5

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## Political Risk Management for the Global Supply Chain



Ralph L. Kliem

Providing an overview of systemic and systematic perspectives on political risk analysis, the book covers concepts, tools, and techniques to address the topic. Concepts, tools, and techniques integrate supply chain management, enterprise risk management, project management, change implementation, and business continuity. The book discusses the full spectrum of developing, deploying, testing, and maintaining processes for conducting political risk analysis. The book concludes with a case study demonstrating the application of the processes as well as checklists and a glossary.

Auerbach Publications

Market: Supply Chain Management

August 2021: 6.14 x 9.21: 254pp

Hb: 978-0-367-47733-2: £120.00

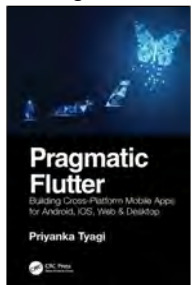
Pb: 978-1-032-04537-5: £44.95

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Priyanka Tyagi

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CRC Press

Market: IT - Mobile Applications

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eBook: 978-1-003-10463-6

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Sergey Samoilenko and Kweku-Muata Osei-Bryson

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Routledge

Market: Social Sciences Research

August 2021: 6.14 x 9.21: 310pp

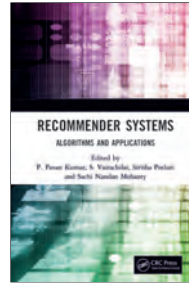
Hb: 978-0-367-90396-1: £115.41

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Edited by P. Pavan Kumar, S. Vairachilai, Sirisha Potluri and Sachi Nandan Mohanty

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CRC Press

Market: Artificial Intelligence

June 2021: 6.14 x 9.21: 248pp

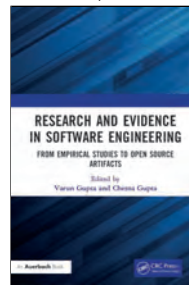
Hb: 978-0-367-63185-7: £99.99

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Auerbach Publications

Market: Software Engineering

June 2021: 6.14 x 9.21: 338pp

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CRC Press

**Market:** Security & Auditing

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CRC Press

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September 2021: 6.14 x 9.21: 200pp

Hb: 978-0-367-55553-5: **£57.99**

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The internet is making our daily life as digital as possible and this new era is called the Internet of Everything (IoE). Edge computing is an emerging data analytics concept to address the challenges associated with IoE. Edge computing facilitates data analysis at the edge of the network instead of interacting with cloud-based servers. More and more devices need to be added in remote locations without any substantial monitoring strategy. This book will serve as a single source of reference for acquiring the knowledge on the technology, process and people involved in the next generation computing and security. It will be a valuable aid for researchers, advanced students and professionals.

CRC Press

**Market:** Network Security

August 2021: 7 x 10: 304pp

Hb: 978-0-367-46414-1: **£89.99**

eBook: 978-1-003-02863-5

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## Securing Social Networks in Cyberspace



Edited by **Al-Sakib Khan Pathan**, International Islamic University Malaysia, Kuala Lumpur

This book collates the key security and privacy concerns faced by individuals and organizations who use various social networking sites. This includes activities such as connecting with friends, colleagues and family; sharing and posting information; managing audio, video and photos; and all other aspects of using social media sites.; This book can be used as a reference item for easy understanding of complex Cybersecurity issues in Social Network or Social Networking Services. It would be beneficial for the academicians and graduate level researchers mainly. Also, general readers may find it beneficial in protecting

their social media related profiles.

CRC Press

**Market:** IT - Network Security

October 2021: 7 x 10: 298pp

Hb: 978-0-367-68173-9: **£84.99**

eBook: 978-1-003-13452-7

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## Smart Ships



Edited by **Yang Xiao**, The University of Alabama, Tuscaloosa, USA and **Tieshan Li**

Smart shipping is a future method for transporting ocean cargo and exploring the resources of oceans for medical drugs, food, energy resources, and other products. A smart ship is an integration of shipping with many fields such as fishing, manufacturing, navigation, communication, computing, control, sensing, etc., to provide better shipping and services. The purpose of this edited book is to provide state-of-the-art approaches and novel technologies for smart ships covering a range of topics in the areas so that it will be an excellent reference book for the researchers, students and professionals in these areas.

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**Market:** Transport Technology

October 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-45830-0: **£99.99**

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Auerbach Publications

**Market:** Software Engineering

August 2021: 6.14 x 9.21: 502pp

Hb: 978-1-032-02912-2: **£115.00**

Pb: 978-1-032-01722-8: **£46.99**

eBook: 978-1-003-19312-8

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A Methodical Approach



Elvis C. Foster and Bradford A. Towle Jr.

This text provides a comprehensive, but concise introduction to software engineering. It adopts a methodical approach to solving software engineering problems, proven over several years of teaching, with outstanding results. The book covers concepts, principles, design, construction, implementation, and management issues of software engineering. With an emphasis on object-oriented development, the second edition features new chapters on software engineering projects, management support systems, and software engineering frameworks and patterns as a significant building block for the design and construction of contemporary software systems.

Auerbach Publications

**Market:** Software Engineering

July 2021: 7 x 10: 578pp

Hb: 978-0-367-76943-7: **£120.00**Pb: 978-0-367-74601-8: **£59.99**

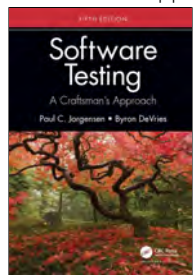
eBook: 978-0-367-74602-5

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A Craftsman's Approach



Paul C. Jorgensen, Grand Valley State University, Allendale, Michigan, USA and Byron DeVries

The 5th Edition of Software Testing: A Craftsman's Approach responds to feedback from users and is a major rewrite, deleting outdated material and adding new sections on model-based testing and feature interaction testing. One major change is the shift to Java for both the procedural and object-oriented examples. The examples are updated and include an event-driven example. The fifth edition streamlines examples and more tightly coordinates the chapters. This best-selling textbook retains its strong emphasis on theory and rigor.

Auerbach Publications

**Market:** Information Technology

June 2021: 7 x 10: 550pp

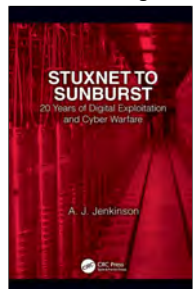
Hb: 978-0-367-35849-5: **£74.99**

eBook: 978-1-003-16844-7

Prev. Ed Hb: 978-1-466-56068-0

\* For full contents and more information, visit: [www.routledge.com/9780367358495](http://www.routledge.com/9780367358495)**Stuxnet to Sunburst**

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Andrew Jenkinson

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CRC Press

**Market:** Cybersecurity

October 2021: 6.14 x 9.21: 208pp

Hb: 978-1-032-06849-7: **£99.99**Pb: 978-1-032-06850-3: **£42.99**

eBook: 978-1-003-20414-5

\* For full contents and more information, visit: [www.routledge.com/9781032068497](http://www.routledge.com/9781032068497)**The Cybersecurity Self-Help Guide**

Arun Soni

Cybercrime is increasing at an exponential rate. Every day new hacking techniques and tools are being developed by threat actors to bypass security systems and access private data. Most people do not know how to secure themselves, their devices, and their media shared online.

This book is an up-to-date self-help guide on Cybersecurity for everyone who connects to the Internet and uses technology. It is an effort to spread awareness about Cybersecurity by explaining techniques and methods to be implemented practically by readers.

CRC Press

**Market:** Cybersecurity

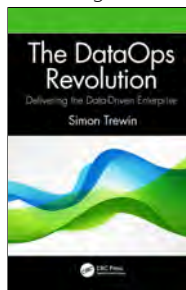
October 2021: 6.14 x 9.21: 192pp

Hb: 978-0-367-70952-5: **£99.99**Pb: 978-0-367-70953-2: **£42.99**

eBook: 978-1-003-14867-8

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Delivering the Data-Driven Enterprise



Simon Trewin

DataOps is a new way of delivering data and analytics that is proven to get results. It enables IT and users to collaborate in the delivery of solutions that help organizations to embrace a data driven culture. This book is a narrative about real world issues involved in using DataOps to make data-driven decisions in modern organizations. The book is built around real delivery examples from the author's own experience and lays out principles and a methodology for success using DataOps. Presenting practical design patterns and DataOps approaches, the book shows how DataOps projects are run and presents the benefits of using DataOps to implement data solutions.

Auerbach Publications

**Market:** Data Analytics

August 2021: 6.14 x 9.21: 194pp

Hb: 978-1-032-10893-3: **£74.99**Pb: 978-1-032-06296-9: **£29.99**

eBook: 978-1-003-21979-8

\* For full contents and more information, visit: [www.routledge.com/9781032108933](http://www.routledge.com/9781032108933)**The Digital Reconstruction of Healthcare**

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Paul Cerrato and John Halamka

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The complex challenges facing healthcare require innovative solutions that make patient care more effective, easily available, and affordable. Part of the solution is to transition much of patient care from hospitals, clinics, and offices to a variety of virtual settings. This digital reconstruction of medicine includes telemedicine, hospital at home services, mobile apps, remote sensing devices, and other cutting-edge technologies. The book takes a deep dive into these tools and their impact across the globe, and explores how they are being customized to meet patient needs in China, India, Germany, Scotland, Israel, Finland, and the U.S., among other countries.

HIMSS Publishing

**Market:** Healthcare Informatics

June 2021: 6.14 x 9.21: 150pp

Hb: 978-1-032-01513-2: **£74.99**Pb: 978-0-367-55597-9: **£38.99**

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## The Evolving Landscape of Ethical Digital Technology



Simon Rogerson

Information and communication technology is now part of everyday life. This amazing technology has the potential to empower, to connect and to include but, alas, this is not always the case as, at times, it restricts, excludes, and divides. This book explores this paradox through an anthology written over twenty-five years. It teases out the ethical and social impacts of technological development and application. It highlights the lessons learnt and those still to be learnt. The readings are grouped into five; technological journey, process of development, ICT products, digital ethics education and future prospects. It is an exploration of how to ensure ICT is for everyone by everyone.

Auerbach Publications

**Market:** Information Technology

September 2021: 7 x 10: 342pp

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Te Wu

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Auerbach Publications

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July 2021: 6.14 x 9.21: 314pp

Hb: 978-1-032-03319-8: **£135.00**

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Bridging the Gap between Security and the Business

Jeffrey Brown

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CRC Press

**Market:** Cybersecurity Management

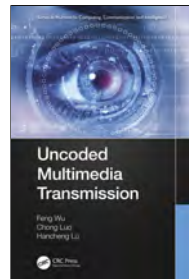
September 2021: 6.14 x 9.21: 394pp

Hb: 978-0-367-57001-9: **£59.99**

eBook: 978-1-003-10029-4

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Feng Wu, Chong Luo and Hancheng Lu

*Series: Multimedia Computing, Communication and Intelligence*

This book is the very first monograph in the general area of uncoded multimedia transmission written in a self-contained format. This book addresses both the fundamentals and the applications of uncoded transmission. It gives a systematic introduction to the fundamental theory and concepts in this field, and at the same time, also presents specific applications that reveal the great potential and impacts for the technologies generated from the research in this field.

CRC Press

**Market:** IT - Communications & Networks

July 2021: 6.14 x 9.21: 348pp

Hb: 978-0-367-63295-3: **£85.00**

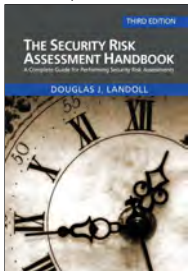
eBook: 978-1-003-11868-8

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A Complete Guide for Performing Security Risk Assessments



Douglas Landoll, Lantego, LLC, Austin, Texas, USA

This edition has expended coverage essential topics such as threat analysis, data gathering, risk analysis, and risk assessment methods and added coverage of new topics essential for current assessment projects (e.g., cloud security, supply chain management, security risk assessment methods). This edition includes detailed guidance on gathering data and analyzing over 200 administrative, technical, and physical controls using the RIOT data gathering method; introduces the RIOT FRAME (risk assessment method), includes hundreds of tables, over 70 new diagrams and figures, over 80 exercises, and provides an analysis of many of the current popular security risk assessment methods.

CRC Press

**Market:** IT Security

September 2021: 7 x 10: 518pp

Hb: 978-0-367-54747-9: **£120.00**

Pb: 978-1-032-04165-0: **£57.99**

eBook: 978-1-003-09044-1

Prev. Ed Hb: 978-1-439-82148-0

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Protocols, Applications and Security Concerns

Niaz Chowdhury and Lewis Mackenzie

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CRC Press

**Market:** Communications Technology

October 2021: 6.14 x 9.21: 224pp

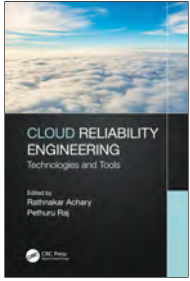
Hb: 978-0-367-45744-0: **£69.99**

eBook: 978-1-315-11090-5

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## Cloud Reliability Engineering

Technologies and Tools



Edited by **Rathnakar Achary** and **Pethuru Raj**, IBM Pvt.Ltd., Manyata Tech Park, Bangalore, India

This book covers the concepts of cloud reliability engineering along with various best practices in the industries to fill the gap between the developers, administrators and end users. Cloud reliability engineering represents a new paradigm that provides effective maintenance, maintainability, and availability of cloud Infrastructure. The book introduces the core aspects of stochastic techniques applied to cloud reliability engineering, as well as the reliability engineering approaches for designing and developing cloud infrastructure.

CRC Press

**Market:** Cloud Computing

April 2021: 6.14 x 9.21: 352pp

Hb: 978-0-367-71373-7: **£99.99**

Pb: 978-0-367-46775-3: **£53.99**

eBook: 978-1-003-03097-3

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## A First Course in Linear Model Theory

Nalini Ravishanker, University of Connecticut, Storrs, USA, Zhiyi Chi, University of Connecticut and Dipak K. Dey, University of Connecticut, Storrs, USA

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This book represents an entirely fresh approach for introducing to students the mathematical and statistical concepts and tools that form the backbone for the study of the theory and applications of linear models, both univariate and multivariate. This second edition features several new topics that are extremely relevant to the current research in statistical methodology. Revised or expanded topics include analysis of covariance, Bayesian linear and generalized linear model, nonlinear regression, ridge regression, resistant and robust regression, generalized linear models, model selection, multiple comparisons, hierarchical linear models, random effects and variance components.

Chapman and Hall/CRC

Market: Statistics

October 2021: 7 x 10: 528pp

Hb: 978-1-439-85805-9: **£74.99**

eBook: 978-1-315-15665-1

Prev. Ed Hb: 978-1-584-88247-3

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A Key to Business Success



Necip Doganaksoy, Siena College, School of Business, William Q. Meeker and Gerald J. Hahn

Series: *ASA-CRC Series on Statistical Reasoning in Science and Society*

The audience is quantitatively literate readers who are interested in learning about how statistics is used to solve real-life reliability problems. The goal is not to teach the nitty gritty details and the underlying theory of such analyses. Instead, the authors use real-life examples and case studies to illustrate applications of statistics with heavy reliance of data and analysis graphs so as to provide a general appreciation of the subject. Only a rudimentary and perhaps dated knowledge of some basic statistical concepts is assumed.

Chapman and Hall/CRC

Market: Statistics

June 2021: 5.5 x 8.5: 248pp

Hb: 978-1-032-01996-3: **£76.99**

Pb: 978-1-138-05400-4: **£29.99**

eBook: 978-1-003-18136-1

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Malte Grosser, Henning Bumann and Hadley Wickham

Series: *Chapman & Hall/CRC The R Series*

This book offers solutions to all 284 exercises in *Advanced R, Second Edition*. All the solutions have been carefully documented and made to be as clear and accessible as possible. Working through the exercises and their solutions will give you a deeper understanding of a variety of programming challenges, many of which are relevant to everyday work. This will expand your set of tools on a technical and conceptual level. You will be able to transfer many of the specific programming schemes directly and will discover far more elegant solutions to everyday problems.

Chapman and Hall/CRC

Market: Statistics

July 2021: 6.14 x 9.21: 304pp

Hb: 978-1-032-00750-2: **£94.99**

Pb: 978-1-032-00749-6: **£38.99**

eBook: 978-1-003-17541-4

\* For full contents and more information, visit: [www.routledge.com/9781032007502](http://www.routledge.com/9781032007502)



2nd Edition

## Applied Engineering Statistics

R. Russell Rhinehart and Robert M. Bethea, Texas Tech University, Lubbock, USA

Thoroughly updated throughout, this second edition will continue to be about the practicable methods of statistical applications for engineers, and as well for scientists and people in business. Contrasting a mathematical and abstract orientation of many statistics texts, which expresses the science/math values of researchers, this book presents the fundamental concepts, provides supporting derivation, and focuses on the application to concrete examples and the interpretation of outcomes.

CRC Press

Market: Statistics

November 2021: 7 x 10: 376pp

Hb: 978-1-032-11948-9: **£74.99**

eBook: 978-1-003-22233-0

Prev. Ed Hb: 978-0-824-78503-1

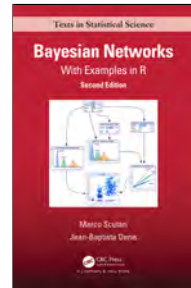
\* For full contents and more information, visit: [www.routledge.com/9781032119489](http://www.routledge.com/9781032119489)



2nd Edition

## Bayesian Networks

With Examples in R



Marco Scutari, Istituto Dalle Molle and Jean-Baptiste Denis, INRA

Series: *Chapman & Hall/CRC Texts in Statistical Science*

The book introduces Bayesian networks using a hands-on approach, through simple yet meaningful examples. Discrete Bayesian networks are described first (Chapter 2), followed by Gaussian Bayesian networks (Chapter 3). Mixed networks (which include arbitrary random variables, and typically mix continuous and discrete ones) are covered as well (Chapter 4). These chapters explain the whole process of Bayesian network modelling, from structure learning to parameter learning to inference. All steps in learning are illustrated with R code.

Chapman and Hall/CRC

Market: Statistics

July 2021: 6.14 x 9.21: 272pp

Hb: 978-0-367-36651-3: **£74.99**

eBook: 978-0-429-34743-6

Prev. Ed Hb: 978-1-482-22558-7

\* For full contents and more information, visit: [www.routledge.com/9780367366513](http://www.routledge.com/9780367366513)



## Building a Platform for Data-Driven Pandemic Prediction

From Data Modelling to Visualisation - The CovidLP Project

Edited by Dani Gamerman, Marcos O. Prates, Thais Paiva and Vinicius D. Mayrink

This book is about building platforms for pandemic prediction. It provides an overview of probabilistic prediction for pandemic modeling based on a data-driven approach. It also provides guidance on building platforms with currently available technology using tools such as R, Shiny, and interactive plotting programs. Readers can follow different reading paths through the book, depending on their needs. The book is meant as a basis for further investigation of statistical modelling, implementation tools, monitoring aspects, and software functionalities.

Chapman and Hall/CRC

Market: Statistics

September 2021: 6.14 x 9.21: 368pp

Hb: 978-0-367-70999-0: **£130.00**

Pb: 978-0-367-70997-6: **£52.99**

eBook: 978-1-003-14888-3

\* For full contents and more information, visit: [www.routledge.com/9780367709990](http://www.routledge.com/9780367709990)



## Confidence Intervals for Discrete Data in Clinical Research



Vivek Pradhan, (978)Pfizer Inc., Cambridge, Massachusetts, USA, Ashis Gangopadhyay, Sandeep M. Menon, Pfizer, Cambridge, Massachusetts, USA, Cynthia Basu, Pfizer Inc. CA, USA and Tathagata Banerjee, Indian Institute of Management, Ahmedabad

Series: *Chapman & Hall/CRC Biostatistics Series*

There is only one published book on confidence interval for clinical research. This book has a cookbook style with several examples and codes so that methods presented in the book can be implemented. The primary audience will be statisticians.

Chapman and Hall/CRC

Market: Statistics

November 2021: 6.14 x 9.21: 242pp

Hb: 978-1-138-04898-0: £120.00

eBook: 978-1-315-16985-9

\* For full contents and more information, visit: [www.routledge.com/9781138048980](http://www.routledge.com/9781138048980)

## Doing Meta-Analysis with R

A Hands-On Guide



Mathias Harrer, Pim Cuijpers, Toshi A. Furukawa and David D. Ebert

This book serves as an accessible introduction into how meta-analyses can be conducted in R. Essential steps for meta-analysis are covered, including pooling of outcome measures, forest plots, heterogeneity diagnostics, subgroup analyses, meta-regression, methods to control for publication bias, risk of bias assessments and plotting tools. Advanced, but highly relevant topics such as network meta-analysis, multi-/three-level meta-analyses, Bayesian meta-analysis approaches, SEM meta-analysis are also covered.

Chapman and Hall/CRC

Market: Statistics

September 2021: 6.14 x 9.21: 500pp

Hb: 978-0-367-61007-4: £68.99

eBook: 978-1-003-10734-7

\* For full contents and more information, visit: [www.routledge.com/9780367610074](http://www.routledge.com/9780367610074)

## Engineering Production-Grade Shiny Apps



Colin Fay, Sébastien Rochette, Vincent Guyader and Cervan Girard

Series: *Chapman & Hall/CRC The R Series*

This book helps people build production-grade shiny applications, by providing advice, tools, and a methodology to work on web applications with R. Starting with an overview of the challenges which arise from any big web application project: organizing work, thinking about the user interface, challenges of teamwork & production environment, it then moves to a step by step methodology that goes from the idea to the end application. Each part of this process will cover in detail a series of tools and methods to use while building production-ready shiny applications. Finally, it ends with a series of approaches

and advice about optimizations for production.

Chapman and Hall/CRC

Market: Statistics

June 2021: 6.14 x 9.21: 384pp

Hb: 978-0-367-44467-9: £120.00

Pb: 978-0-367-46602-2: £44.99

eBook: 978-1-003-02987-8

\* For full contents and more information, visit: [www.routledge.com/9780367444679](http://www.routledge.com/9780367444679)

2nd Edition

## Event History Analysis with R

Göran Broström, Professor Emeritus, Umeå University, Sweden

Series: *Chapman & Hall/CRC The R Series*

This is the second edition of a practical book on using R for survival and event history analysis. There is an emphasis on applying the methods to problems from the social sciences through detailed real-world examples. The mathematical details are kept to a minimum, so the book is accessible to an applied audience. The book has been updated with new chapters on reproducible research and register-based data methods, and updates throughout notably to the computing and graphics.

Chapman and Hall/CRC

Market: Statistics

November 2021: 6.14 x 9.21: 336pp

Hb: 978-1-138-58771-7: £74.99

eBook: 978-0-429-50376-4

Prev. Ed Hb: 978-1-439-83164-9

\* For full contents and more information, visit: [www.routledge.com/9781138587717](http://www.routledge.com/9781138587717)



## Foundations of Statistics for Data Scientists

With R and Python



Alan Agresti and Maria Kateri

Series: *Chapman & Hall/CRC Texts in Statistical Science*

Designed as a textbook for a one or two-term introduction to mathematical statistics for students training to become data scientists, *Foundations of Statistics for Data Scientists: With R and Python* is an in-depth presentation of the topics in statistical science

Chapman and Hall/CRC

Market: Statistics

October 2021: 7 x 10: 488pp

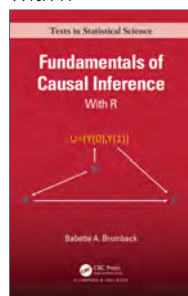
Hb: 978-0-367-74845-6: £74.99

eBook: 978-1-003-15983-4

\* For full contents and more information, visit: [www.routledge.com/9780367748456](http://www.routledge.com/9780367748456)

## Fundamentals of Causal Inference

With R



Babette A. Brumback

Series: *Chapman & Hall/CRC Texts in Statistical Science*

Explains and relates different methods of confounding adjustment in terms of potential outcomes and graphical models, including standardization, difference-in-differences estimation, the front-door method, instrumental variables estimation, and propensity score methods.

Chapman and Hall/CRC

Market: Statistics

November 2021: 6.14 x 9.21: 250pp

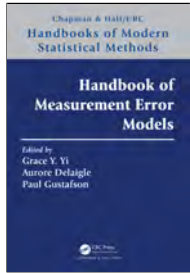
Hb: 978-0-367-70505-3: £53.99

eBook: 978-1-003-14667-4

\* For full contents and more information, visit: [www.routledge.com/9780367705053](http://www.routledge.com/9780367705053)



## Handbook of Measurement Error Models



Edited by **Grace Y. Yi**, Aurore Delaigle and Paul Gustafson, University of British Columbia, Vancouver, Canada  
*Series: Chapman & Hall/CRC Handbooks of Modern Statistical Methods*

Reference text for statistical methods and applications for measurement error models for: researchers who work with error-contaminated data, graduate students from statistics and biostatistics, analysts in multiple fields, including medical research, biosciences, nutritional studies, epidemiological studies and environmental studies.

Chapman and Hall/CRC

**Market:** Statistics

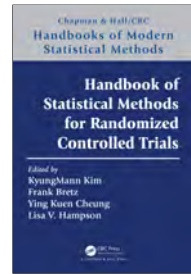
September 2021: 7 x 10: 648pp

Hb: 978-1-138-10640-6: **£190.00**

eBook: 978-1-315-10127-9

\* For full contents and more information, visit: [www.routledge.com/9781138106406](http://www.routledge.com/9781138106406)

## Handbook of Statistical Methods for Randomized Controlled Trials



Edited by **KyungMann Kim**, University of Wisconsin, **Frank Bretz**, Novartis, **Ying Kuen K. Cheung**, Columbia University, New York, New York, USA and **Lisa V. Hampson**, Novartis  
*Series: Chapman & Hall/CRC Handbooks of Modern Statistical Methods*

This handbook is intended to serve as a reference text on statistical methods for randomized controlled trials. It can be used as a textbook for a graduate course in statistical methods for randomized controlled trials as well as a reference for those involved in the design, monitoring and analysis of randomized controlled trials.

Chapman and Hall/CRC

**Market:** Statistics

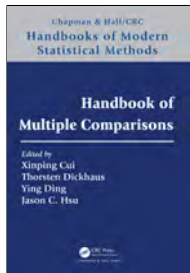
August 2021: 7 x 10: 650pp

Hb: 978-1-498-71462-4: **£190.00**

eBook: 978-1-315-11969-4

\* For full contents and more information, visit: [www.routledge.com/9781498714624](http://www.routledge.com/9781498714624)

## Handbook of Multiple Comparisons



Edited by **Xinping Cui**, Dept. of Statistics, University of California, Riverside USA, **Thorsten Dickhaus**, University of Bremen, Institute for Statistics, Germany, **Ying Ding**, University of Pittsburgh and **Jason C. Hsu**, The Ohio State U, USA  
*Series: Chapman & Hall/CRC Handbooks of Modern Statistical Methods*

The handbook will treat the topics of multiple comparisons, simultaneous and selective inference from a variety of different perspectives. The handbook will be useful for researchers, students/lecturers, and practitioners. The need for such a systematic treatment of the field originates from the relevance

of multiple comparisons in many applications (medicine, industry, economics), and from the diversity of approaches and developments, which shall be described here in a coherent manner. The readers' background should consist of basic knowledge of probability theory and statistics on the basis of an undergraduate course.

Chapman and Hall/CRC

**Market:** Statistics

November 2021: 7 x 10: 540pp

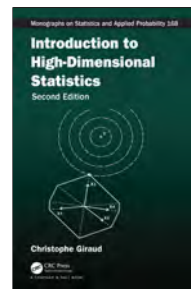
Hb: 978-0-367-14067-0: **£190.00**

eBook: 978-0-429-03088-8

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## 2nd Edition

### Introduction to High-Dimensional Statistics



**Christophe Giraud**, Paris Sud University, France

*Series: Chapman & Hall/CRC Monographs on Statistics and Applied Probability*

This new, second edition preserves the philosophy of the first edition: to be a concise guide for students and researchers discovering the area and interested in the mathematics involved. The main concepts and ideas are presented in simple settings, avoiding thereby unessential technicalities. High-dimensional statistics is a fast-evolving field and much progress has been made on a large variety of topics, providing new insights and methods.

Chapman and Hall/CRC

**Market:** Statistics

July 2021: 6.14 x 9.21: 368pp

Hb: 978-0-367-71622-6: **£68.99**

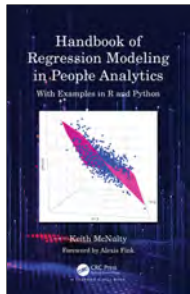
eBook: 978-1-003-15874-5

Prev. Ed Hb: 978-1-482-23794-8

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## Handbook of Regression Modeling in People Analytics

With Examples in R and Python



**Keith McNulty**

This book is a learning resource on inferential statistics and regression analysis. It teaches how to do a wide range of statistical analyses in both R and in Python, ranging from simple hypothesis testing to advanced multivariate modelling. The book hits a 'sweet spot' where there is just enough mathematical theory to support a strong understanding of the methods, but with a step-by-step guide and easily reproducible examples and code, so that the methods can be put into practice immediately. This makes the book accessible to a wide readership, from public and private sector analysts and practitioners to students and researchers.

Chapman and Hall/CRC

**Market:** Statistics

July 2021: 6.14 x 9.21: 272pp

Hb: 978-1-032-04174-2: **£59.99**

eBook: 978-1-003-19415-6

\* For full contents and more information, visit: [www.routledge.com/9781032041742](http://www.routledge.com/9781032041742)

## Javascript for R



**John Coene**

*Series: Chapman & Hall/CRC The R Series*

Little known to many, R works just as well with JavaScript—this book delves into the various ways both languages can work together. The ultimate aim of this work is to put the reader at ease with inviting JavaScript in their data science workflow. In that respect the book is not teaching one JavaScript but rather we show how little JavaScript can greatly support and enhance R code. Therefore, the focus is on integrating external JavaScript libraries and no prior knowledge of JavaScript is required.

Chapman and Hall/CRC

**Market:** Statistics

July 2021: 6.14 x 9.21: 354pp

Hb: 978-0-367-68064-0: **£110.00**

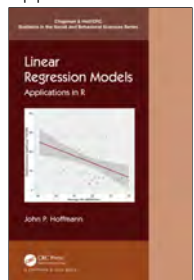
Pb: 978-0-367-68063-3: **£44.99**

eBook: 978-1-003-13404-6

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## Linear Regression Models

Applications in R



John P. Hoffman

*Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

The book is aimed primarily at advanced undergraduate and graduate students in the social, behavioral, health sciences, and related disciplines, taking a first course in linear regression. It could also be used for self-study, and would make an excellent reference for any researcher in these fields. The R code and detailed examples provided throughout the book equip the reader with an excellent set of tools for conducting research on numerous social and behavioral phenomena.

Chapman and Hall/CRC

**Market:** Statistics

September 2021: 6.14 x 9.21: 436pp

Hb: 978-0-367-75368-9: **£150.00**

Pb: 978-0-367-75366-5: **£59.99**

eBook: 978-1-003-16223-0

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## Methodologies in Biosimilar Product Development



Edited by Sang Joon Lee and Shein-Chung Chow, Duke University School of Medicine

*Series: Chapman & Hall/CRC Biostatistics Series*

Methodologies in Biosimilar Product Development covers the practical and challenging issues that are commonly encountered during the development, review, and approval of a proposed biosimilar product. This book embraces innovative thinking of design and analysis for biosimilar studies, which are required for review and approval of biosimilar regulatory submissions.

Chapman and Hall/CRC

**Market:** 1

September 2021: 6.14 x 9.21: 440pp

Hb: 978-0-367-89634-8: **£170.00**

eBook: 978-1-003-20580-7

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## Machine Learning for Knowledge Discovery with R

Methodologies for Modeling, Inference and Prediction

Kao-Tai Tsai

'Machine Learning for Knowledge Discovery with R' contains methodologies and examples for statistical modelling, inference, and prediction of data analysis. It includes most recent supervised and unsupervised machine learning methodologies such as recursive partitioning tree-based modelling, regularized regression, support vector machine, neural network, clustering, and causal-effect inference. Additionally, it emphasizes the use of graphical methods for data exploration to understand the internal structure of data sets. The book includes many examples based on real-world big data from life-science, finance, etc. to illustrate the applications of the methods described therein.

Chapman and Hall/CRC

**Market:** Statistics

September 2021: 6.14 x 9.21: 264pp

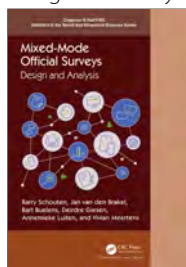
Hb: 978-1-032-06536-6: **£74.99**

eBook: 978-1-003-20568-5

\* For full contents and more information, visit: [www.routledge.com/9781032065366](http://www.routledge.com/9781032065366)

## Mixed-Mode Official Surveys

Design and Analysis



Barry Schouten, Statistics Netherlands, The Hague, The Netherlands, Jan van den Brakel, Statistics Netherlands, Netherlands, Bart Buelens, Statistics Netherlands, Netherlands, Deirdre Giesen, Annemieke Luiten, Statistics Netherlands, Netherlands and Vivian Meertens, Statistics Netherlands, Netherlands

*Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

The survey mode is the design feature with the strongest impact on all survey errors and causes the greatest disparities in survey costs. The design and analysis of mixed-mode surveys, therefore, need to be handled carefully. There is currently no

comprehensive monograph on using mixed-mode data collection methods and its consequences for the entire survey process from design, data collection, and estimation. This book fills that gap by bringing together authors from all methodological areas and backgrounds.

Chapman and Hall/CRC

**Market:** Statistics

September 2021: 7 x 10: 368pp

Hb: 978-1-138-61845-9: **£99.99**

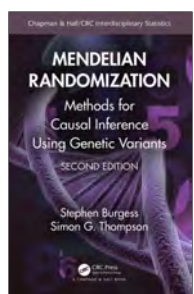
eBook: 978-0-429-46115-6

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2nd Edition

## Mendelian Randomization

Methods for Causal Inference Using Genetic Variants



Stephen Burgess, MRC Biostatistics Unit, Cambridge, UK and Simon G. Thompson, Department of Public Health and Primary Care, University of Cambridge, UK

*Series: Chapman & Hall/CRC Interdisciplinary Statistics*

Mendelian randomization (MR) uses genetic instrumental variables to make inferences about causal effects based on observational data. It, therefore, can be a reliable way of assessing the causal nature of risk factors, such as biomarkers, for a wide range of disease outcomes. This is a substantial revision of a popular reference on MR, which uniquely gives a comprehensive overview of methods and applications in this field. The field has changed dramatically since publication of the first edition, and so has the book.

Chapman and Hall/CRC

**Market:** Statistics

June 2021: 6.14 x 9.21: 240pp

Hb: 978-0-367-34184-8: **£150.00**

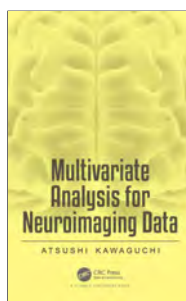
Pb: 978-1-032-01951-2: **£59.99**

eBook: 978-0-429-32435-2

Prev. Ed Hb: 978-1-466-57317-8

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## Multivariate Analysis for Neuroimaging Data



Atsushi Kawaguchi

This book enables us to analyze statistically brain imaging data. It is meant for a wide range of researchers interested in biostatistics, data science, and neuroscience. It is useful to understand the background theory of standard software for neuroimaging data analysis. The state of art multivariate methods developed by the author's research team is explained here using numerical examples that have been formulated with the free statistical software R. This book supports the application of these methods to one's own data in neuroscience and encourages new research in biostatistics and data science.

CRC Press

**Market:** Statistics

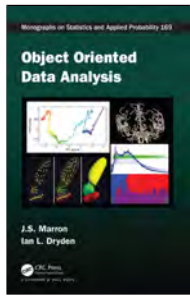
July 2021: 6.14 x 9.21: 224pp

Hb: 978-0-367-25532-9: **£140.00**

eBook: 978-0-429-28960-6

\* For full contents and more information, visit: [www.routledge.com/9780367255329](http://www.routledge.com/9780367255329)

## Object Oriented Data Analysis



J. S. Marron and Ian L. Dryden

Series: *Chapman & Hall/CRC Monographs on Statistics and Applied Probability*

Object Oriented Data Analysis (OODA) provides a useful general framework for the consideration of many types of Complex Data. It is deliberately intended to be particularly useful in the analysis of data in complicated situations which are typically not easily represented as an unconstrained matrix of numbers.

Chapman and Hall/CRC

Market: Statistics

November 2021: 6.14 x 9.21: 464pp

Hb: 978-0-815-39282-8: £89.99

eBook: 978-1-351-18967-5

\* For full contents and more information, visit: [www.routledge.com/9780815392828](http://www.routledge.com/9780815392828)

## Single-Arm Phase II Survival Trial Design



Jianrong Wu

Series: *Chapman & Hall/CRC Biostatistics Series*

Single-arm phase II trial is a key component for successfully developing advanced cancer drug and treatment, particular for target therapy and immunotherapy in which time-to-event endpoints are often the primary endpoints. Several methodology have been developed in literature but there is no book available. Also most test statistics for single-arm phase II trial design with time-to-event endpoint are not available in commercial software. The proposed book provides a comprehensive summary to the most commonly used methods for single-arm phase II trial design with time-to-event endpoints.

Chapman and Hall/CRC

Market: Statistics

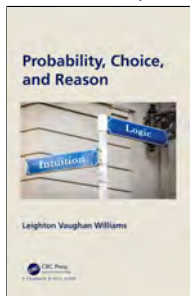
August 2021: 6.14 x 9.21: 273pp

Hb: 978-0-367-65345-3: £130.00

eBook: 978-1-003-12905-9

\* For full contents and more information, visit: [www.routledge.com/9780367653453](http://www.routledge.com/9780367653453)

## Probability, Choice, and Reason



Leighton Vaughan Williams

This book should serve as an invaluable and fascinating resource for university, college, and high school students who wish to extend their reading, as well as for teachers and lecturers who want to liven up their courses while retaining academic rigour. It will also appeal to anyone who wishes to develop skills with numbers or has an interest in the many statistical and other paradoxes that permeate our lives. Indeed, anyone studying the sciences, social sciences, or humanities on a formal or informal basis will enjoy and benefit from this book.

Chapman and Hall/CRC

Market: Statistics

September 2021: 6.14 x 9.21: 312pp

Hb: 978-0-367-53893-4: £125.00

Pb: 978-0-367-53891-0: £49.99

eBook: 978-1-003-08361-0

\* For full contents and more information, visit: [www.routledge.com/9780367538934](http://www.routledge.com/9780367538934)

2nd Edition

## Statistical Design, Monitoring, and Analysis of Clinical Trials

Principles and Methods

Weichung Joe Shih, Rutgers University School of Public Health, Piscataway, New Jersey, USA and Joseph Aisner, Rutgers U Robert Wood Johnson Medical School, USA

Series: *Chapman & Hall/CRC Biostatistics Series*

This book concentrates on the biostatistics component of clinical trials. This new edition is updated throughout and includes three new chapters. Developed from the authors' courses taught to public health and medical students, residents, and fellows during the past 15 years, the text shows how biostatistics in clinical trials is an integration of many fundamental scientific principles and statistical methods. The book begins with ethical and safety principles, core trial design concepts, the principles and methods of sample size and power calculation, and analysis of covariance and stratified analysis.

Chapman and Hall/CRC

Market: Statistics

October 2021: 6.14 x 9.21: 320pp

Hb: 978-0-367-77244-4: £74.99

eBook: 978-1-003-17652-7

Prev. Ed Hb: 978-1-482-25049-7

\* For full contents and more information, visit: [www.routledge.com/9780367772444](http://www.routledge.com/9780367772444)

## Signal Detection for Medical Scientists

Likelihood Ratio Test-based Methodology



Ram Tiwari, US Food and Drug Administration, Silver Spring, MD, Jyoti Zalkikar, US FDA and Lan Huang, US FDA

Series: *Chapman & Hall/CRC Biostatistics Series*

This book presents the data mining techniques with focus on likelihood ratio test (LRT) based methods for signal detection. It emphasizes computational aspect of LRT methodology and is pertinent for first-time researchers and graduate students venturing into this interesting field. The book is written as a reference book for professionals in pharmaceutical industry, manufactures of medical devices, and regulatory agencies. The book deals with the signal detection in drug/device evaluation, which is important in the post-market evaluation of medical products, and in the pre-market signal detection during clinical

trials for monitoring products.

Chapman and Hall/CRC

Market: Statistics

June 2021: 6.14 x 9.21: 244pp

Hb: 978-0-367-20143-2: £89.99

eBook: 978-0-429-25975-3

\* For full contents and more information, visit: [www.routledge.com/9780367201432](http://www.routledge.com/9780367201432)

2nd Edition

## Statistical Methods for Handling Incomplete Data



Jae Kwang Kim and Jun Shao

Due to recent theoretical findings and advances in statistical computing, there has been a rapid development of techniques and applications in the area of missing data analysis. Statistical Methods for Handling Incomplete Data covers the most up-to-date statistical theories and computational methods for analyzing incomplete data.

The book is primarily aimed at researchers and graduate students from statistics, and could be used as a reference by applied researchers with a good quantitative background. It includes many real data examples and simulated examples to help readers understand the methodologies.

Chapman and Hall/CRC

Market: Statistics

November 2021: 6.14 x 9.21: 384pp

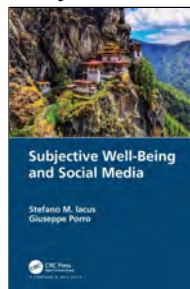
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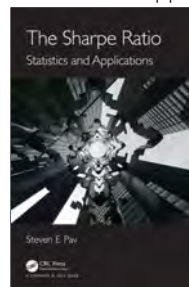
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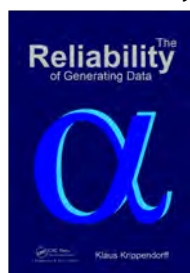
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