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WBC 2016 Montreal Inc
607 av Notre-Dame
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Phone: 450-550-3388 ext. 111
Fax: 514-227-5083

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WBC AWARD RECIPIENTS

WBC 2016 - Developing Country Scholarship

P.0204	<p>May 19 - 15:00 - Room 220bcd (P1) Poster Session 1B: Specific applications of biomaterials Chitosan-based electrospun nanofibers mats reinforced with phenytoin-loaded PLGA/Lecithin nanoparticles as potential wound dressings Isra H Ali, Center for Material Science, Zewail City for Science and Technology, El-Shrouk Egypt</p>			<p>May 21 - 15:00 - Room 220bcd (P5) Poster Session 2B: Surfaces and interfaces Local and systemic analysis of porous iron implantation in femoral bone of rats Deni Noviana, Division of Surgery and Radiology, Department of Clinic Reproduction and Pathology, Faculty of Veterinary Medicine, Bogor Agricultural University, Jawa Barat, Indonesia</p>
P.0749	<p>May 18 - 15:00 - Room 220bcd (P4) Poster Session 1A: Biomaterials and host response Combining Hepatitis B surface antigen (HBsAg) with Anthrax (rPA) for a single oral vaccine Vishal Bhargava, Guru Teg Bahadur Charitable Hospital, Kanpur, India</p>	18:00	233.7	<p>May 19 - 16:30 - Room 515 New Frontiers Symposium: Standardization in evaluations of biodegradable metals Grain size distribution effects on the degradation and mechanical behaviours of biodegradable metallic biomaterials Camillus CSO Obayi, Department of Metallurgical & Materials Engineering, University of Nigeria, Nsukka, Nigeria</p>
P.0057	<p>May 18 - 15:00 - Room 220bcd (P1) Poster Session 1A: Biomaterials for therapeutic and diagnostic delivery PolyLacticAcid for medical applications : mechanical properties as a function of degradation process Anas El Maliki, Mechanical Department, École Nationale Supérieure d'Électricité et de Mécanique, Casablanca, Morocco</p>			<p>May 19 - 15:00 - Room 220bcd (P5) Poster Session 1B: Surfaces and interfaces Laser lithography for dental alloy treatment "biological response" Maksym V Pogorielov, Medical Institute, Sumy State University, Sumy, Ukraine</p>
P.2358	<p>May 21 - 15:00 - Room 220bcd (P2) Poster Session 2B: Building blocks Corrosion behavior of new beta type Ti-29Nb-13Ta-4.6Zr alloy in simulated body fluid solution Gunawarman Gunawarman, Mechanical Engineering Department, Andalas University, Padang, Indonesia</p>	10:30	203.3	<p>May 19 - 10:00 - Room 511e General Session: Biomaterials in gene therapy Pullulan-PEI-Histidine towards gene delivery: vector unpacking with respect to molecular weight and cytoplasmic histones Rekha M Ramesan, Biosurface Technology Division, BMT Wing, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, India</p>
P.2917	<p>May 20 - 15:00 - Room 220bcd (P5) Poster Session 2A: Surfaces and interfaces Silica functionalized ultra small iron oxide nanoparticles (IONPs) for T1-weighted magnetic resonance imaging (MRI) contrast agent Muhammad Zubair Iqbal, Division of Functional Materials and Nano-Devices, Ningbo Institute of Materials Technology & Engineering (NIMTE), Chinese Academy of Sciences (CAS), Ningbo, Pakistan</p>			<p>May 18 - 15:00 - Room 220bcd New Frontier Poster Session 1A SEP cross-linked porous silk fibroin/PVA scaffolds for tissue regeneration: fabrication, characterization and cyto-compatibility studies Mahesh K Sah, Department of Biomedical Engineering, Indian Institute of Technology Hyderabad, Medak, India</p>

WBC AWARD RECIPIENTS

WBC 2016 - ASV Trainee Award

May 18 - 15:00 - Room 220bcd (P3)
 Poster Session 1A: Tissue engineering and regenerative medicine
 P.0661 Ceramic scaffolds containing sodium alendronate loaded poly(lactide-co-glycolide) microparticles for bone tissue engineering
Lucja D Rumian, Faculty of Materials Science and Ceramics, Department of Biomaterials, AGH - University of Science and Technology Krakow, Poland

May 18 - 15:00 - Room 220bcd (P3)
 Poster Session 1A: Tissue engineering and regenerative medicine
 P.0661 Glow-discharge radio frequency plasma _x000B_polyether and fluoropolyether coated substrates prevent IgG protein adsorption
Marvin Mecwan, Bioengineering, University of Washington, Seattle, WA, United States

May 18 - 15:00 - Room 220bcd (P4)
 Poster Session 1A: Innovation in fabrication
 P.0867 Porphyrin micro-nano particles mimicking viral morphology and influence of their roughness on endocytosis
Wenbo Zhang, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China

WBC 2016 - École de technologie supérieure Trainee Award

May 22 - 10:30 - Room 516a
 New Frontiers Symposium: Biomaterials inducing osteogenesis, angiogenesis and immunomodulation
 11:00 506.2 Biomaterial-mediated modulation of macrophage behavior to promote bone regeneration
Pamela L Graney, Department of Biomedical Engineering, Drexel University, Philadelphia, PA, United States

May 19 - 10:00 - Room 510a
 New Frontiers Symposium: Reproductive tissue engineering
 11:00 201.4 Design of biomaterial grafts to support transplantation of isolated primordial follicles that produce live births in a mouse infertility model
Ekaterina Kniazeva, Obstetrics and Gynecology, Northwestern University, Chicago, IL, United States

May 18 - 15:00 - Room 220bcd (P1)
 Poster Session 1A: Biomaterials for therapeutic and diagnostic delivery
 P.0107 Fabrication of chitosan based nanoparticles for radiosensitizer siPCGF5 delivery
Eunsun Lee, Division of Radiation Effect, Korea Institute of Radiological & Medical Sciences, Seoul, Korea

May 21 - 10:30 - Room 516a
 General Session: Biomaterials for cardiovascular applications: materials innovation for stents and endovascular prostheses
 10:45 406.2 Proliferation and functionality of blood vascular cells on Angiopoietin-1 modified 316L Stainless Steel
Xin Li, Key Lab. of Advanced Technology for Materials of Education Ministry, Southwest Jiaotong University, Chengdu, P.R. China

May 20 - 16:30 - Room 511f
 General Session: Drug-eluting devices
 16:45 332.2 Development of drug-eluting intraocular lens for improving post-cataract surgical complications
Li-Jyuan Luo, Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan Taiwan

May 20 - 10:00 - Room 524
 New Frontiers Symposium: Injectable biomaterials for cell therapy and tissue engineering
 10:30 313.2 Matrix assisted transplantation of functional beige adipose tissue
Kevin Tharp, UC Berkeley, Berkeley, CA, United States

May 18 - 11:00 - Room 519
 General Session: Biomaterials and cellular signaling and programming
 11:15 110.2 Structural extracellular matrix contributions to breast tumorigenesis
Karin Wang, Department of Environmental Health (MIPS), Harvard School of Public Health, Boston, MA, United States

May 19 - 10:00 - Room 515
 New Frontiers Symposium: Next-generation biomaterials for islet delivery and engraftment for diabetes
 10:30 205.2 Vasculogenic degradable hydrogel to enhance islet engraftment and function within an alternative transplant site
Jessica D Weaver, Mechanical Engineering and Bioengineering, Georgia Institute of Technology, Atlanta, GA, United States

WBC 2016 - Fondazione Democenter-Sipe Trainee Award

May 19 - 10:00 - Room 220bcd (P1)
 New Frontiers Symposium: Reproductive tissue engineering
 11:45 201.7 Development of a transplantable artificial ovary: influence of follicle stage on transplantation outcome
Maria Costanza Chiti, Gynecology, Université Catholique de Louvain, Brussels, Belgium

May 22 - 10:30 - Room 510b
 New Frontiers Symposium: Bioinspired adhesive materials
 11:45 502.5 Mussel-inspired Adhesive Epidermal Growth Factor for Biological Surface Modification
Hongli Mao, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan

WBC AWARD RECIPIENTS

May 18 - 14:00 - Room 524
 General Session: Self-assembling micellar systems
 14:15 127.2 Immobilization of polymersome in hydrogels via host-guest complexation for triggered drug delivery
Meiling Zhu, Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong, Hong Kong, Hong Kong

WBC 2016 - Institute of Biomaterials & Biomedical Engineering (IBBME) at the University of Toronto Trainee Award

May 20 - 15:00 - Room 220bcd (P5)
 Poster Session 2A: Surfaces and interfaces
 P.2885 Structural and mechanical characterization of Cr-Co alloy after oxygen plasma immersion ion implantation
Letícia M De Andrade, University Center of FEI, Sao Bernardo do Campo, Brazil

May 20 - 15:00 - Room 220bcd (P1)
 Poster Session 2A: Specific applications of biomaterials
 P.2223 Targeted delivery of cisplatin-loaded liposomes to intracranial gliomas
Natalia Nukolova, Department of Fundamental and Applied Neurobiology, The Serbsky National Research Center for Social and Forensic Psychiatry, Moscow, Russian Federation

May 20 - 15:00 - Room 220bcd (P1)
 Poster Session 2A: Specific applications of biomaterials
 P.2239 Fluoride and carbonate co-incorporated porcine bone derived biological apatite stimulates osteogenesis in vitro via WNT/beta-catenin pathway
Wei Qiao, Faculty of Dentistry, The University of Hong Kong, Hong Kong, P.R. China

May 20 - 15:00 - Room 220bcd (P5)
 Poster Session 2A: Surfaces and interfaces
 P.2975 Optimising diamond surface for a better neural interface
Wei Tong, Physics, the University of Melbourne, Parkville, Australia

May 18 - 15:00 - Room 220bcd (P3)
 Poster Session 1A: Tissue engineering and regenerative medicine
 P.0699 Hydrogel-based Kidney Tubulogenesis Model for Drug Toxicity Applications
Heather M Weber, Leibniz Institute of Polymer Research Dresden, Dresden, Germany

WBC 2016 - Italian Society for Biomaterial (SIB) Trainee Award

We would like to thank the congress ambassador Francesca Boccafoschi for her efforts in securing financial support towards trainee awards from the companies listed below.

May 21 - 15:00 - Room 220bcd (P4)
 Poster Session 2B: Biomaterials and host response
 P.2688 Gallium as novel anti-bacterial and pro-osteointegrative agent for orthopedic devices: an in vitro and in vivo study
Andrea Cochis, Department of Health Sciences, University of Piemonte Orientale "UPO", Novara Italy

May 21 - 15:00 - Room 220bcd (P3)
 Poster Session 2B: Tissue engineering and regenerative medicine
 P.2510 Decellularized matrices enriched with antibiotics: a promising engineering approach for tissue regeneration
Luca Fusaro, Health Science Department, Università del Piemonte Orientale Novara, Italy

May 19 - 15:00 - Room 220bcd (P2)
 Poster Session 1B: Functional materials
 P.0472 Engineered Porous Scaffold for Periprosthetic Infection Prevention
Giorgio Iviglia, Research & Development, Department of Applied Science and Technology (DISAT), Nobil bio ricerche - Politecnico di Torino Torino, Italy

May 19 - 15:00 - Room 220bcd (P1)
 Poster Session 1B: Biomaterials for therapeutic and diagnostic delivery
 P.0118 Tunable drug delivery using chemoselective functionalization of hydrogels
Emanuele Mauri, The Chemistry, Material and Chemical Engineering Department "Giulio Natta" (CMIC) Politecnico di Milano, Milano, Italy

May 20 - 10:00 - Room 510a
 General Session: Electrospinning and related technologies
 10:00 301.1 Shape memory properties of electrospun non-woven mat prepared from sol-gel crosslinked poly(e-caprolactone)
Andrea Merletti, University of Bologna, Bologna, Italy

May 20 - 15:00 - Room 220bcd (P5)
 Poster Session 2A: Surfaces and interfaces
 P.2955 Investigating a novel polyhydroxyalkanoate/multiwall carbon nanotubes nanocomposite as an electrically conducting implant coating for neuroprosthetic devices
Eugenia Pugliese, Bioscience, Biotechnology & Biopharmaceutics, University of Bari, Bari, Italy

WBC AWARD RECIPIENTS

May 21 - 10:30 - Room 524
 New Frontiers Symposium: Bioinspired materials and devices for regenerative medicine
 11:30 413.5 Scientific design, realization and clinical use of human derived dermal matrix (HDM) in regenerative medicine
Valeria Purpura, Emilia Romagna Regional Skin Bank, Bufalini Hospital, Cesena, Italy

May 20 - 10:00 - Room 518
 General Session: Biomaterials for control of tissue induction
 10:30 309.3 MMPs inhibition as molecular approach to abdominal aortic aneurysm (AAA) treatment
Martina Ramella, Health Science Department Università del Piemonte Orientale, Novara, Italy

May 20 - 10:00 - Room 520c
 New Frontiers Symposium: Calcium phosphate mineralization and maturation for biomaterials
 12:15 312.9 Biomimetic mineralization of synthetic collagen-like peptide: a bottom-up approach to design advanced nanocomposite scaffolds for tissue engineering
Gloria Belen Ramirez Rodriguez, Institute of Science and Technology for Ceramics, Faenza, Italy

May 22 - 14:00 - Room 511e
 General Session: Biomaterials for cancer therapy
 15:15 516.6 Tuning scaffold pore features to accomplish biomimicry in 3D tumor models
Claudio Ricci, Department of Surgical, Medical, Molecular Pathology and Emergency Medicine, Cisanello Hospital, Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy

May 19 - 15:00 - Room 220bcd (P4)
 Poster Session 1B: Innovation in fabrication
 P.0840 Synthesis of photocrosslinkable divinyl-fumarate poly-epsilon-caprolactone for stereolithography applications
Alfredo Ronca, Institute for Polymers, Composites and Biomaterials, National Research Council of Italy, Naples, Italy

May 19 - 15:00 - Room 220bcd (P5)
 Poster Session 1B: Surfaces and interfaces
 P.0992 Magnetic nano-architectures intended for bone cancer treatment: physical and biological characterization
Stefania Scialla, Department of Engineering for Innovation, University of Salento, Lecce, Italy

May 21 - 10:30 - Room 519
 General Session: Metallic biomaterials and alloys
 12:00 410.6 Microstructure and biodegradation behaviour of new degradable composite - Fe-Mg2Si for biomedical applications
Malgorzata Sikora-Jasinska, Department of Mechanical Engineering, Politecnico di Milano, Milano, Italy

May 19 - 14:00 - Room 520c
 New Frontiers Symposium: Smart biomaterials from complex structures of natural macromolecules
 14:45 226.4 Fine-tunable micropattern of porosity to promote scaffold neovascularization
Elena Maria Varoni, Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy

WBC 2016 - McGill University Merit Trainee Award

May 20 - 15:00 - Room 220bcd (P2)
 Poster Session 2A: Biomaterials in cellular engineering
 P.2301 Lego-inspired organ-on-a-chip gelatin methacryloyl microfluidic system
Julio CAleman, Molecular and Cellular Biosciences, Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC, United States

May 20 - 16:30 - Room 510b
 General Session: Nano-structured materials for unique functions
 17:15 330.4 Development and Characterization of Functionalized Self-assembling Nanopeptide on the Effect of Angiogenesis for Injured Brain Tissue Regeneration
Kai-Chieh Chang, Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

May 20 - 15:00 - Room 220bcd (P3)
 Poster Session 2A: Tissue engineering and regenerative medicine
 P.2525 In situ synthesis of hydroxyapatite for the production of natural rubber/poly(lactide-co-glicolide)/hydroxyapatite composites
Teo A Dick, Department of Materials science and engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil

May 18 - 15:00 - Room 220bcd (P2)
 Poster Session 1A: Biomaterials in cellular engineering
 P.0363 Human adipose-derived stem cell isolation from fat tissues by membrane filtration method via nylon net filters having different pore sizes
Hong-Ren Lin, Chemical Engineering and Material Sciences Department, National Center University, Taoyuan Taiwan

May 18 - 15:00 - Room 220bcd (P4)
 Poster Session 1A: Biomaterials and host response
 P.0779 Syntheses of biocompatible polyimide and poly(amide-imide) containing phosphorylcholine moiety and the coating ability of the nanosheets
Mari Ogino, Course of Industrial Chemistry, Graduate School of Engineering, Tokai University, Kanagawa, Japan

May 18 - 11:00 - Room 524
 General Session: Biomimetic materials
 11:45 113.4 Rational design of keratin-based injectable hydrogels for biomedical applications
Najeong Park, AJOU university, Suwon, Korea

WBC AWARD RECIPIENTS

- May 22 - 10:30 - Room 518
General Session: Biomaterials in thrombosis and hemostasis
- 11:00 509.3 Transfusion with synthetic platelet substitutes, H12-(ADP)liposomes, effectively rescues thrombocytopenic rabbits from massive hemorrhage
Masato Takikawa, Department of Advanced Science and Engineering, Waseda University, Tokyo, Japan
- May 18 - 16:30 - Room 510a
General Session: Three-dimensional fabrication
- 16:45 129.2 Low-temperature fabrication of porous ceramic/starch composite scaffolds for drug delivery and bone tissue engineering
Changlu Xu, Soochow University, Orthopaedic Institute, The First Affiliated Hospital, Soochow University, Suzhou, P.R. China
- May 18 - 11:00 - Room 524
General Session: Biomimetic materials
- 11:30 113.3 The effect of biomimetic proteoglycans on collagen self-assembly
Tao Yang, Material Science and Engineering, Drexel University, Philadelphia, PA, United States

WBC 2016 - Medtronic Sofradim Trainee Award

- May 20 - 10:00 - Room 517a
New Frontiers Symposium: Bioinspired materials and devices for regenerative medicine
- 10:00 308.1 Novel molecular printing method to create complex 3D hydrogels with precise molecular composition
Juan Pablo Aguilar, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- May 21 - 15:00 - Room 220bcd (P1)
Poster Session 2B: Specific applications of biomaterials
- P.2168 Graft-type antithrombogenic MPC polymers as the surface modifier on the small-diameter vascular prostheses of segmented polyurethane
Yihua Liu, Bioengineering, The University of Tokyo, Tokyo, Japan
- May 19 - 15:00 - Room 220bcd (P5)
Poster Session 1B: Mechanics and modeling biomaterials science and engineering
- P.0912 Scale-dependent fluid permeability of tissue engineering scaffolds as a result of structure geometry and mechanics
Giovanni S Offeddu, Department of Engineering, University of Cambridge, Cambridge, United Kingdom
- May 22 - 10:30 - Room 515
General Session: Biomaterials in musculoskeletal repair: hard tissues
- 11:00 505.3 The proangiogenic potential of a novel poly(lactic) based composite biomaterial for guided bone regeneration
Hugo Oliveira, Institut National de la Santé et de la Recherche Medicale (INSERM) U1026 Biotis Bordeaux, France

- May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Specific applications of biomaterials
- P.0266 PREPARATION AND CHARACTERIZATION OF EXTRACELLULAR MATRIX SCAFFOLDS FROM PORCINE CHOLECYST, JEJUNUM AND URINARY BLADDER
Manjula P M Puthuparambil Mony, Experimental Pathology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Poojappura, India
- May 18 - 15:00 - Room 220bcd (P5)
Poster Session 1A: Mechanics and modeling biomaterials science and engineering
- P.0919 Mechanical properties of titanium-niobium alloy and morphological characterization of nanotubes obtained by anodizing technique
Aline Rossetto Da Luz, Programa de Pós-Graduação em Engenharia e Ciência dos Materiais, Universidade Federal do Paraná, Curitiba, Brazil

WBC 2016 - Nature Publishing Trainee Award

- May 20 - 15:00 - Room 220bcd (P4)
Poster Session 2A: Innovation in fabrication
- P.2813 Utilising additive layer manufactured components to improve osteointegration of endoprostheses: A FEA and histological study
Aadil S Mumith, John Scales Centre for Biomedical Engineering, Institute of Orthopaedics and Musculoskeletal Science, Stanmore, United Kingdom
- May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Biomaterials for therapeutic and diagnostic delivery
- P.0144 Engineered brain tumor model to evaluate efficacy of candidate therapies
Sara Pedron, University of Illinois at Urbana-Champaign, Urbana, IL, United States
- May 18 - 15:00 - Room 220bcd (P4)
Poster Session 1A: Biomaterials and host response
- P.0797 Bacterial cellulose and bacterial cellulose/polycaprolactone composite as tissue substitutes in rabbit corneas
Fabricio L Valente, Departamento de Veterinaria, Universidade Federal de Vicosa, Vicosa, Brazil

WBC AWARD RECIPIENTS

WBC 2016 - Polymer Solutions Trainee Award

- 17:15 430.3 May 21 - 16:30 - Room 510a
New Frontiers Symposium: Laser processing of biomaterials
The Use of Stereolithography for Native Silk Structuring
Anastasia Brif, Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom
- 10:00 307.1 May 20 - 10:00 - Room 516C
General Session: Synthetic scaffolds as extracellular matrices
Nanocomposite silica-polycaprolactone fibrous membranes for guided bone regeneration
Antonio Castro, Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands
- P.2354 May 21 - 15:00 - Room 220bcd (P2)
Poster Session 2B: Building blocks
Physical, mechanical and biodegradation properties of ω -pentadecalactone-co- δ -hexalactone copolymers
Jorge Fernández Hernández, Department of Mining-Metallurgy and Materials Science, University of the Basque Country, Bilbao, Spain
- 14:15 425.2 May 21 - 14:00 - Room 519
General Session: Biosensors
Biosensors for monitoring of enzymatic wound healing processes
Dagmara Jankowska, Laboratory for Biointerfaces, Empa Swiss Federal Laboratories for Materials Science and Technology, St. Gallen, Switzerland
- P.0136 May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Biomaterials for therapeutic and diagnostic delivery
Preparation and studies on multifunctional mixed polyurethane drug carriers
Zhicheng Pan, Sichuan University, Chengdu, P.R. China
- 14:00 425.1 May 21 - 14:00 - Room 519
General Session: Biosensors
Fibronectin-based nanomechanical biosensors towards measuring cell-generated strains during tissue morphogenesis
Alkiviadis Tsamis, Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States

WBC 2016 - Portola Pharmaceuticals Trainee Award

- 17:30 433.4 May 21 - 16:30 - Room 511f
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
Self-propelling particles that stop hemorrhage by transporting therapeutics through flowing blood
James R Baylis, Michael Smith Laboratories, University of British Columbia, Vancouver, BC, Canada
- P.2147 May 20 - 15:00 - Room 220bcd (P1)
Poster Session 2A: Specific applications of biomaterials
Artificial dense granules, a potential, biomimetic procoagulant agent composed of inorganic polyphosphate, initiates autoactivation of factor XII
Alexander J Donovan, Chemical Engineering, University of Illinois at Chicago, Chicago, IL, United States
- 14:15 521.2 May 22 - 14:00 - Room 517a
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
A Synthetic Heparin Antidote with Negligible Effect on Fibrin(ogen), Clotting and Clot Morphology
Manu Thomas Kalathottukaren, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada
- 18:00 433.6 May 21 - 16:30 - Room 511f
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
Accelerating coagulation in traumatic injuries using inorganic polyphosphate-coated silica nanoparticles.
Damien Kudela Chemistry, University of California, Santa Barbara, Santa Barbara, CA, United States
- 17:15 433.3 May 21 - 16:30 - Room 511f
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
Characterization and optimization of PolySTAT, an injectable hemostat for the treatment of traumatic injury
Robert J Lamm, Bioengineering, University of Washington, Seattle, WA, United States
- 17:45 433.5 May 21 - 16:30 - Room 511f
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
Synthetic Platelet (SynthoPlate) Technology Enhances Hemostasis in both Prophylactic and Emergency Administration in Mouse Models of Bleeding
Christa L Pawlowski, Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States

WBC AWARD RECIPIENTS

WBC 2016 - TA Instruments Trainee Award

- 11:00 508.2 May 22 - 10:30 - Room 517a
New Frontiers Symposium: Organ-on-a-chip engineering
On-chip human microvasculature for real-time visualization and quantification of tumor cell extravasation and early metastatic seeding
Michelle B Chen, Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States
- 14:15 516.2 May 22 - 14:00 - Room 511e
General Session: Biomaterials for cancer therapy
Local programming of the lymph node microenvironment to promote efficient T cell immunity in neuroblastoma
Joshua M Gammon, University of Maryland, College Park, College Park, MD, United States
- 14:45 219.3 May 19 - 14:00 - Room 515
New Frontiers Symposium: Standardization in evaluations of biodegradable metals
A systematic comparison of biodegradation behavior of absorbable metal: in standardized immersion, arterial bioreactor and in vivo study
Juan Wang, Department of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China

WBC 2016 - Tepha Trainee Award

- P.2161 May 20 - 15:00 - Room 220bcd (P1)
Poster Session 2A: Specific applications of biomaterials
Engineered small diameter vascular grafts by cell sheet engineering with human umbilical cord vein perivascular cells
Beyya Gokcinar Yagci, Department of Stem Cell Sciences, Institute of Health Sciences, Ankara, Turkey

WBC 2016 - Université Laval Trainee Award

- P.0815 May 18 - 15:00 - Room 220bcd (P4)
Poster Session 1A: Innovation in fabrication
Design of a protease and ROS responsive biomaterial approach to target drug delivery in inflamed tissue microenvironment
Paolo Contessotto, Centre for Research in Medical Devices (CÚRAM), School of Engineering and Informatics National University of Ireland, Galway, Ireland
- 11:30 502.4 May 22 - 10:30 - Room 510b
New Frontiers Symposium: Bioinspired adhesive materials
Catechol-modified biomolecules in layer-by-layer assembly: a fishing net-like model to enhance stability and long-term performance
Rifang Luo, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China

May 19 - 16:30 - Room 519
New Frontiers Symposium: Nanobiomechanics of living tissue and cells
Polymeric Mechanical Amplifiers of Receptor-Mediated Apoptosis
Michael J Mitchell, Department of Chemical Engineering and the David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States

17:15 238.3

May 19 - 16:30 - Room 518
General Session: Biomaterials for therapeutic delivery
Performance of collagen-based corneal implant with anti-infective capability in rabbit model of infectious keratitis
Andri K Riau, Tissue Engineering and Stem Cell Group, Singapore Eye Research Institute, Singapore, Singapore

16:30 237.1

May 18 - 15:00 - Room 220bcd (P2)
Poster Session 1A: Functional materials
Thiolated-2-Methacryloyloxyethyl Phosphorylcholine Protected Silver Nanoparticles as Novel Photo-Induced Cell-Killing Agents
Arunee Sangsuwan, Graduate School of Science and Engineering, Kansai University, Osaka, Japan

P.0503

May 21 - 15:00 - Room 220bcd (P4)
Poster Session 2B: Innovation in fabrication
3D printed open-pore Ti6Al4V construct promotes interfacial tissue maturation and retains a higher density of less aged osteocytes
Furqan A Shah, University of Gothenburg, Gothenburg, Sweden

P.2806

May 22 - 14:00 - Room 511f
General Session: Biomaterials for cardiovascular applications: vascular repair
Silk-Extracellular Matrix Sponges for Striated Muscle Tissue Engineering: Regeneration after injury and disease
Whitney L Stoppel, Biomedical Engineering, Tufts University, Medford, MA, United States

14:45 517.4

May 18 - 11:00 - Room 511e
General Session: Biomaterials for therapeutic delivery
Local engineering of the lymph node microenvironment to promote systemic, antigen-specific tolerance
Lisa H Tostanoski, Fischell Department of Bioengineering, University of Maryland, College Park, MD, United States

11:00 103.1

WBC AWARD RECIPIENTS

WBC 2016 Merit Awards

		May 19 - 15:00 - Room 220bcd (P2) Poster Session 1B: Functional materials			
P.0452		Effect of incorporation of Cu and Zn-doped bioactive glasses on the in vitro apatite formation and antibacterial capacity of PDLLA composite foams Julian Bejarano Narvaez , Departamento de Farmacología y Toxicología, Universidad de Chile, Santiago, Chile	17:15	137.3	May 18 - 16:30 - Room 518 New Frontiers Symposium: The past, present and future in functional tendon repair and regeneration Tenogenic phenotype maintenance and differentiation using macromolecular crowding and mechanical loading Diana Gaspar , National University of Ireland Galway, Galway, Ireland
		May 20 - 15:00 - Room 220bcd (P1) Poster Session 2A: Specific applications of biomaterials			
P.2123		Schwann cell biocompatibility of polycaprolactone/chitosan electrospun scaffolds Ena D Bolaina-Lorenzo , Unidad de Materiales, Centro de Investigación Científica de Yucatán, Yucatán, Mexico		P.0567	May 18 - 15:00 - Room 220bcd (P3) Poster Session 1A: Tissue engineering and regenerative medicine Neural tube morphogenesis in synthetic 3D microenvironments Mehmet U Girgin , Institute of Bioengineering, École polytechnique fédérale de Lausanne, Lausanne, Switzerland
		May 18 - 11:00 - Room 518 New Frontiers Symposium: Glycosaminoglycan-based cell-instructive materials			
11:30	109.2	Spatiotemporal control over hydrogel viscoelasticity towards stem cell mechanobiology Steven R Caliari , BioEngineering, University of Pennsylvania, Philadelphia, PA, United States	17:45	430.5	May 21 - 16:30 - Room 510a New Frontiers Symposium: Laser processing of biomaterials Needle-Free Protein Delivery Across The Skin By Photothermal Effect of Gold Nanorods : Using Hydrogel System Aung Thu Haine , Department of Applied Chemistry and Biochemistry, Bioengineering Laboratory, Kumamoto University, Japan, Kumamoto Japan
		May 19 - 15:00 - Room 220bcd (P2) Poster Session 1B: Functional materials			
P.0460		Development and study of surgical braided silk suture with sustained antibacterial property Xiaojie Chen , biomedical textiles and technology, Donghua University, Shanghai, P.R. China	11:00	110.1	May 18 - 11:00 - Room 519 General Session: Biomaterials and cellular signaling and programming Multivalent Nanomaterial Arrays Leverage Antigen Specificity to Modulate Immune Response in Autoimmune Disease Brittany L Hartwell , Bioengineering, Lawrence, KS, United States
		May 18 - 15:00 - Room 220bcd (P3) Poster Session 1A: Tissue engineering and regenerative medicine			
P.0537		Hydrogel encapsulation and micro-aggregation of co-culture MSC/AC for tissue regeneration Mylene De Ruijter , Department of Orthopaedics, University Medical Center Utrecht Utrecht, Netherlands		P.0470	May 19 - 15:00 - Room 220bcd (P2) Poster Session 1B: Functional materials Design and synthesis of antibacterial waterborne polyurethanes Wei He , College of polymer Science and Engineering, Sichuan University, Chengdu, P.R. China
		May 20 - 10:00 - Room 511f General Session: Biomaterials evaluation in animal models			
10:30	304.3	The mechanism for early promotion of guided bone regeneration with strontium-doped hydroxyapatite bone substitute involves a reduction of osteoclasts and osteoblast-osteoclast coupling processes Ibrahim Ibrahim Elgali , Department of Biomaterials, Institute of Clinical Sciences at Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden	16:30	130.1	May 18 - 16:30 - Room 510b General Session: Anti-infective biomaterials and device related infections FHA-Ag coating on magnesium: A potential way to enhance corrosion resistance as well as antibacterial property Peng Hou , Shanghai 6th Hospital, Shanghai, P.R. China
		May 19 - 15:00 - Room 220bcd (P3) Poster Session 1B: Tissue engineering and regenerative medicine			
P.0564		Piezoelectric nanoscaffolds: mediating tendon regeneration through activation of piezoresponsive receptors. Marc A Fernandez-Yagüe , Biomedical Engineering Centre for Research in Medical Devices (CURAM), Galway, Ireland		P.0899	May 18 - 15:00 - Room 220bcd (P5) Poster Session 1A: Mechanics and modeling biomaterials science and engineering Fibrillar nanomechanics of cartilage collagen and changes associated with compositional degradation Sheetal R Inamdar , School of Engineering and Material Science, Queen Mary University of London, Institute of Bioengineering, London, United Kingdom

WBC AWARD RECIPIENTS

- May 20 - 10:00 - Room 520c
New Frontiers Symposium: Calcium phosphate mineralization and maturation for biomaterials
- 11:45 312.7 A new method for developing bone tissue, using a tissue-engineered fracture repair model
Alexandra Iordachescu, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- May 21 - 15:00 - Room 220bcd (P1)
Poster Session 2B: Biomaterials for therapeutic and diagnostic delivery
- P.2020 Exploring zwitterionic siRNA polyplex coronas as an alternative to traditional PEGylated architectures for improved intravenous pharmacokinetics
Meredith A Jackson, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States
- May 18 - 14:00 - Room 511e
New Frontier Symposium: Nanobiomaterials and nanotechnology for implants, devices, and theranostics
- 14:00 117.1 Self-assembled cationic biodegradable nanoparticles from a new family of pH-responsive Amino Acid-based Poly(ester urea urethane) and their application as a doxorubicin delivery vehicle
Ying Ji, Department of Fiber Science and Apparel Design, Cornell University, Ithaca, NY, United States
- May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Biomaterials for therapeutic and diagnostic delivery
- P.0082 An on demand drug delivery depot for the treatment of inflammatory arthritis
Nitin Joshi, Biomedical Engineering, Brigham and Women's Hospital, Harvard Medical School, Cambridge, MA, United States
- May 20 - 10:00 - Room 511e
General Session: Biomaterials for therapeutic delivery - nanoparticulate systems
- 10:00 303.1 Nanographene oxide $\alpha\epsilon$ hyaluronic acid conjugate for photothermal ablation therapy of skin cancer
Ho Sang Jung, Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea
- May 22 - 14:00 - Room 517a
New Frontiers Symposium: Engineered biomaterials for the management of bleeding and haemorrhage
- 14:45 521.4 Reversal of parenteral anticoagulants by PEG41-PMAPTAC53: characteristics, efficacy and toxicity studies in rodents
Bartłomiej Kalaska, Department of Pharmacodynamics, Medical University of Białystok, Białystok, Poland
- May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Biomaterials for therapeutic and diagnostic delivery
- P.0086 Self-assembled Glucose-cored poly (aryl ether) Dendron gel for efficient encapsulation and controlled release of guest molecules
Ramya Kannan, Department of Chemistry, Indian Institute of Technology Madras, Chennai, India
- May 21 - 15:00 - Room 220bcd (P1)
Poster Session 2B: Biomaterials for therapeutic and diagnostic delivery
- P.2030 Implantable Infusion Pump for On-demand Release of Insulin
Seung Ho Lee, Seoul National University, Seoul, Korea
- May 20 - 15:00 - Room 220bcd (P1)
Poster Session 2A: Biomaterials for therapeutic and diagnostic delivery
- P.2053 Distribution of Systemically Administered Nanoparticles following Cardiac Ischemia-Reperfusion Injury Reveals a Size-Dependent Effect
David J Lundy, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan
- May 19 - 15:00 - Room 220bcd (P3)
Poster Session 1B: Tissue engineering and regenerative medicine
- P.0620 Driving iPSC-derived progenitor fate using in vitro synthesized kidney extracellular matrices assembled under macromolecular crowding
Valentina Magno, Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research, Dresden, Germany
- May 21 - 14:00 - Room 516a
General Session: Biomaterials to modulate biological processes involved in host response
- 14:00 421.1 Preferential recruitment of anti-inflammatory monocytes significantly enhances peripheral nerve regeneration
Nassir Mokarram, Biomedical Engineering, Georgia Institute of Technology/Emory University, Atlanta, GA, United States
- May 20 - 14:00 - Room 519
General Session: Biomaterials in nerve regeneration
- 14:30 324.2 Local application of LNA-based antisense oligonucleotides in a strategy for spinal cord injury treatment
Pedro M Moreno, Institute of Biomedical Engineering (INEB), Institute for Research and Innovation in Health (i3S), Porto, Portugal
- May 20 - 15:00 - Room 220bcd (P4)
Poster Session 2A: Biomaterials and host response
- P.2705 Development of protein markers for evaluating the blood compatibility of biomaterials: Validation of identified markers by comprehensive multivariate proteomic analysis for plasma proteins adsorbed on the surface of metal materials for stents
Yuki Morishita, Division of Medical Devices, National Institute of Health Science, Setagaya-ku, Japan

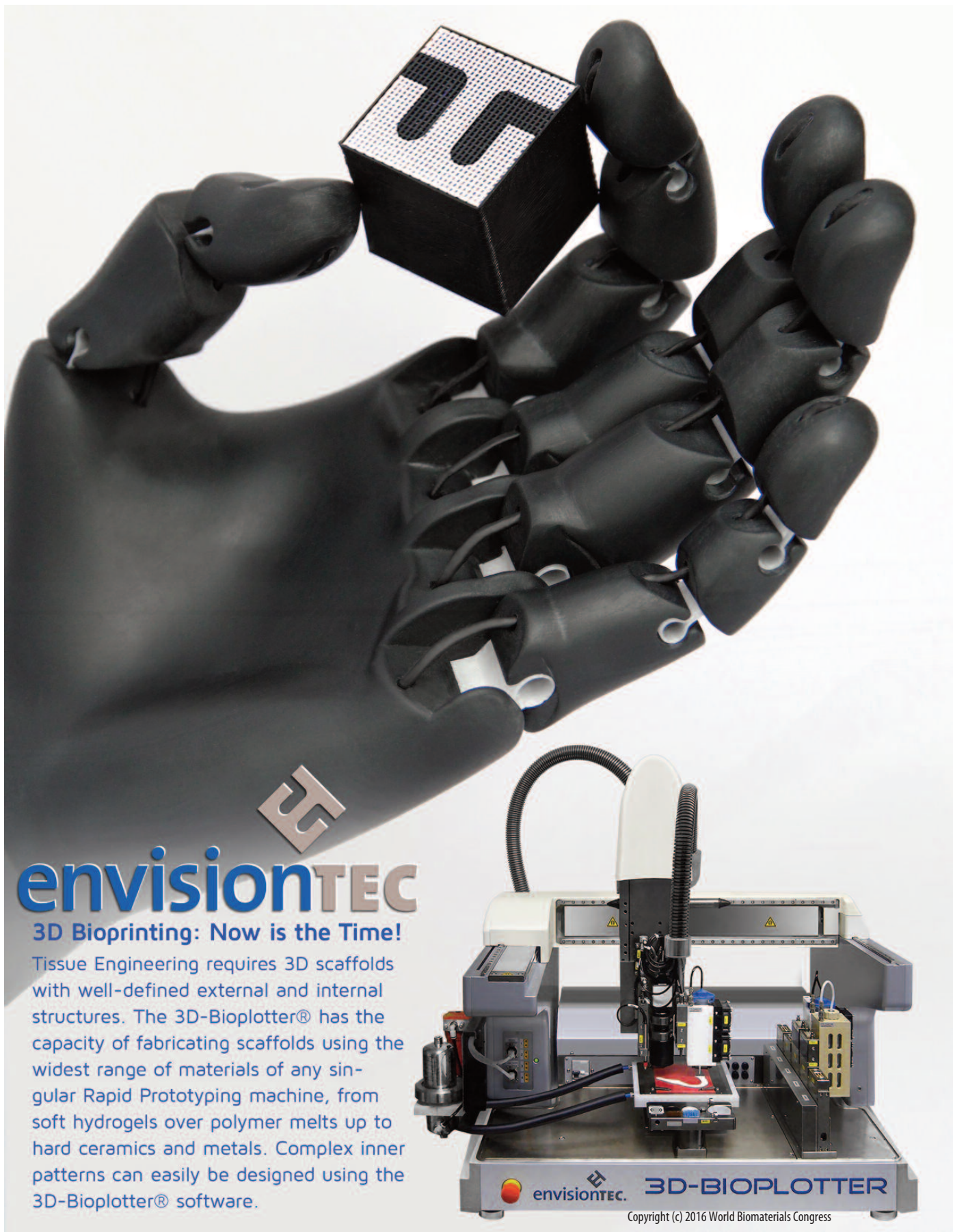
WBC AWARD RECIPIENTS

		May 19 - 10:00 - Room 510b New Frontiers Symposium: Emerging cell-instructive materials for regenerative niche			
10:30	202.2	Controlled sub-nanometer epitope spacing in a three dimensional self-assembled peptide hydrogel Eugene T Pashuck , Department of Materials, Imperial College London, London, United Kingdom			
		May 19 - 15:00 - Room 220bcd (P3) Poster Session 1B: Tissue engineering and regenerative medicine			
	P.0660	3D bioengineered scaffold-based model to investigate the role of the tumour microenvironment in localised prostate cancer progression Brooke A Pereira , Anatomy and Developmental Biology, Monash University, Clayton, Australia	14:45	427.4	
		May 18 - 11:00 - Room 515 New Frontiers Symposium: Externally-addressable smart biomaterials			
12:15	105.5	Light-activatable polymeric nanoparticles for intracellular delivery in cancer stem cells Emanuel N Quartin Costa , UC-Biotech, CNC, University of Coimbra, Cascais, Portugal	17:00	442.2	
		May 18 - 15:00 - Room 220bcd (P5) Poster Session 1A: Mechanics and modeling biomaterials science and engineering			
	P.0917	Tough, injectable and cytocompatible double networks through tandem crosslinking Christopher B Rodell , Bioengineering, University of Pennsylvania, Philadelphia, PA, United States	17:00	337.2	
		May 19 - 15:00 - Room 220bcd (P2) Poster Session 1B: Biomaterials in cellular engineering			
	P.0394	Glycosaminoglycan - biohybrid hydrogels for the immune modulation in wound healing Lucas Schirmer , Max Bergmann Center of Biomaterials, Leibniz-Institut für Polymerforschung Dresden, Dresden, Germany			
		May 18 - 15:00 - Room 220bcd (P4) Poster Session 1A: Biomaterials and host response			
	P.0791	Critical Roles of Clindamycin on Human Mesenchymal Stem Cells In Vitro and In Vivo Bone Regeneration Sarita R Shah , Department of Bioengineering, Rice University, Houston, TX, United States	17:45	239.6	
		May 22 - 14:00 - Room 511e General Session: Biomaterials for cancer therapy			
15:00	516.5	An advanced bioengineered 3D model mimicking prostate cancer-induced bone metastasis microenvironment Ali Shokoohmand , Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia			
		May 20 - 15:00 - Room 220bcd (P6) Poster Session 2A: Clinical performance of biomaterials			
	P.3035	Styrene Maleic Anhydride formulated polyelectrolyte hydrogel with selective antimicrobial property, potentially favorable for the application as female contraceptive implant Bhuvaneshwaran Subramanian , School of Medical Science and Technology (in collaboration with School of Bio-Science and Engineering, Jadavpur University), Indian Institute of Technology, Kharagpur, Kharagpur, India			
		May 21 - 14:00 - Room 520c General Session: Biomaterials in mesenchymal and hematopoietic stem cell biology			
		Role of sodium potassium pump in osteoinduction process of calcium phosphate ceramic Zhurong Tang , National Engineering Research Center for Biomaterials, Chengdu, P.R. China			
		May 21 - 16:30 - Room 524 New Frontiers Symposium: Tissue-specific delivery strategies for mesenchymal stem cells			
		A Shape-controlled Tunable Microgel Cell Delivery Platform for Low-dose Delivery of Primed Stem Cells for In Vivo Therapeutic Neovascularization Dilip Thomas , CÚRAM, National University of Ireland Galway, Galway, Ireland			
		May 20 - 16:30 - Room 518 New Frontiers Symposium: Biomaterial approaches to engineering the neural interface			
		Functionalized PEDOT polymeric coatings for neuroelectrodes: topographical and biological strategies Catalina Vallejo Giraldo , Centre for Research in Medical Devices (CÚRAM), National University of Ireland (NUIG), Galway, Ireland			
		May 20 - 15:00 - Room 220bcd (P4) Poster Session 2A: Innovation in fabrication			
	P.2831	Two-photon polymerization of gelatin hydrogels: carboxylic acid modification as the key to success Jasper M K Van Hoorick , Department of Organic and Macromolecular Chemistry, Polymer Chemistry & Biomaterials Research Group, Ghent University, Ghent, Belgium			
		May 19 - 16:30 - Room 520b New Frontiers Symposium: Biomaterials for bio-3D printing			
		3D-printing bioresorbable vascular stents with metal stent-matching recoil strength Robert Van Lith , Biomedical Engineering, Northwestern University, Chicago, IL, United States			
		May 20 - 15:00 - Room 220bcd (P1) Poster Session 2A: Biomaterials for therapeutic and diagnostic delivery			
	P.2083	Variation of single cell nanomechanics on micropatterned surfaces Xinlong Wang , National Institute for Materials Science, University of Tsukuba, Tsukuba, Japan			

WBC AWARD RECIPIENTS

May 18 - 11:00 - Room 520c
New Frontiers Symposium: Supramolecular biomaterials
11:30 112.2 Surface potentials determine the potency of supramolecular
nanofibrous vaccines
Yi Wen, Department of Biomedical Engineering, Duke University,
Durham, NC, United States

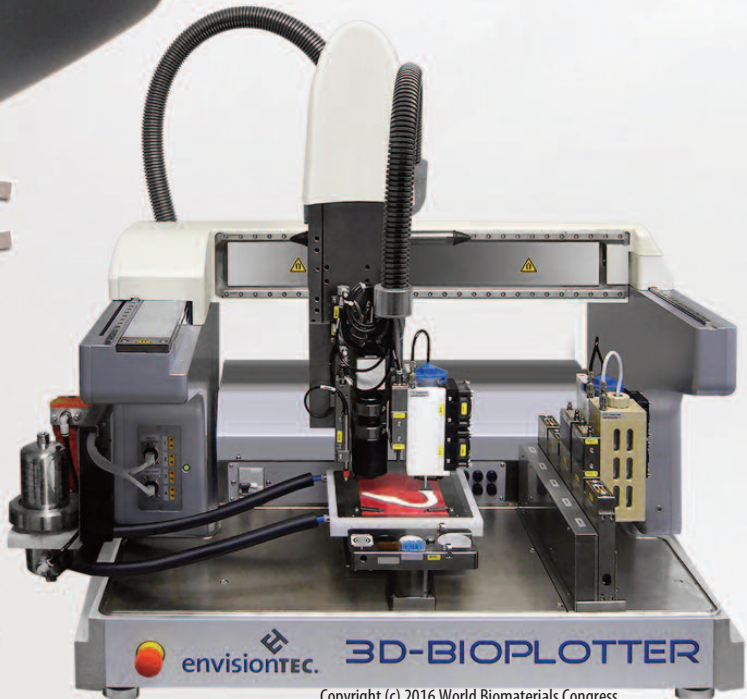
May 19 - 15:00 - Room 220bcd (P1)
Poster Session 1B: Biomaterials for therapeutic and diagnostic
delivery
P.0194 Effect of CpG-DNA inclusion in pH-sensitive polymer-liposome
vaccines on their immune-inducing activities
Yuta Yoshizaki, Applied Chemistry, Osaka Prefecture University,
Sakai, Japan



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DETAILED PROGRAM

TUESDAY, MAY 17, 2016

07:30 - 17:30

Viger Hall - 200 level

Registration open

09:00 - 12:00

518bc

WS1 - Workshop

New directions in biomedical surface analysis

Chair: *David Castner, University of Washington, Seattle, WA, United States*

- 1.1 Impact and challenges for surface analysis of biomaterials
Buddy D Ratner, Engineered Biomaterials (UWEB), University of Washington, Seattle, WA, United States
- 1.2 SIMS for 3D chemical imaging of tissues and cells
Lara Gamble, Bioengineering, University of Washington, Seattle, WA, United States
- 1.3 Surface characterization of biomedical nanoparticles
David Castner, University of Washington, Seattle, WA, United States

09:00 - 13:00

519

WS3 - Workshop

Centre for Commercialization of Regenerative Medicine (CCRM) workshop on commercialization of tissue engineering

Sponsored By:



Chairs: *Michael May, Toronto, ON, Canada*

Phil Vanek, GE Healthcare, Marlborough, DC, United States

- 3.1 **Dion Madsen**, Business Development Bank of Canada, Vancouver, BC, Canada
- 3.2 **Devyn Smith**, Pfizer, Groton, CT, United States
- 3.3 **Phil Vanek**, GE Healthcare, Marlborough, DC, United States
- 3.4 **Allen Eaves**, Stemcell Technologies Inc., Vancouver, BC, Canada
- 3.5 **Richard Grant**, Invetech, Melbourne, Australia
- 3.6 **Konrad Walus**, Aspect Biosystems, Vancouver, BC, Canada
- 3.7 **Mark Curtis**, Business Development, Centre for Commercialization of Regenerative Medicine, Toronto, ON, Canada

09:00 - 12:00

517a

WS4 - Workshop

NSERC / CREATE workshop for young researchers

Sponsored By:



Chairs: *Jennifer Logie, Chemical Engineering, University of Toronto, Toronto, ON, Canada*
Gaétan Laroche, Materials Engineering, Université Laval, Quebec, QC, Canada

- 4.1 The joy of negotiating
Bill Smalley, Route Five International Inc., Oakville, ON, Canada
- 4.2 Career planning
Robert Tousignant, Trybec Management Services Inc., Montreal, QC, Canada

08:30 - 13:30

518a

WS6 - Workshop

Biological substitutes and biodegradable implants: A promising approach for innovative surgery

Sponsored By:



Chairs: *Francesca Boccafoschi, Department of Health Sciences, University of Piemonte Orientale, Novara, Italy*
Eileen Ingham, School of Biomedical Science, University of Leeds, Leeds, United Kingdom

- 6.1 A biomaterials approach to regenerative medicine: a pathway to clinical translation
Stephen F Badyak, McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA, United States
- 6.2 Development of acellular biological scaffolds for repair and regeneration on the knee
Eileen Ingham, School of Biomedical Science, University of Leeds, Leeds, United Kingdom
- 6.3 Development of a decellularized membrane from human dermis for the treatment of extensive damaged tissues
Valeria Purpura, Bufalini Hospital, Cesena, Italy
- 6.4 Second generation xenogenic bone substitutes designing: From innovation to market
Mauro Fiorini, Biotech S.p.A., Arcugnano, Italy
- 6.5 The micro-grafts theory: from biology to clinical practice
Antonio Graziano, Executive Office, HBW srl, Torino, Italy



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- 6.6 Hyaluronic acid and micrografts: the importance of MW in scaffold design
Carlo Soranzo, Fidia Farmaceutici s.p.a., Abano Terme, Italy
- 6.7 From Dardik biograft to cryopreserved human umbilical vein: a new experience in lower limb revascularization
Laura Nicolai, Vascular Surgery Unit, Treviso, Italy
- 6.8 New concept of hybrid polymer composites for biodegradable implants
Xiang Zhang, Lucideon, Cambridge, United Kingdom
- 6.9 Novel biodegradable and biocompatible polymers for medical applications
Ipsita Roy, Faculty of Science and Technology, University of Westminster, London, United Kingdom

12:00 - 13:00 517a

LUNCH for CREATE Workshop and Young Scientist Forum participants (pre-reservation was necessary)

12:00 - 17:00 525

Affiliated Meeting IUS-BSE Annual General Meeting (by invitation only)

13:00 - 17:00 518bc

WS2 - Workshop Recent advances in 3D printing of biomaterials

Chair: Roger Narayan, Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Raleigh, NC, United States

- 2.1 3D ink-jet printing for tissue engineering
Thomas Boland, University of Texas at El-Paso, El-Paso, TX, United States
- 2.2 3D printing: building tissue test systems
Karen Burg, Small Animal Medicine & Surgery, University of Georgia, Athens, GA, United States
- 2.3 Printing cancer cells into intact microvascular networks: a model for investigating cancer cell dynamics during angiogenesis
Douglas Chrisey, Tulane University, New Orleans, LA, United States
- 2.4 Bioprinting: A matter of dimension
Fabien Guillemot, INSERM, Bordeaux, France
- 2.5 Printing living tissues
David B Kolesky, Harvard University, Cambridge, MA, United States

13:00 - 17:00 524

WS5 - Workshop Young Scientist Forum

Sponsored By:  Springer

Chairs: Sandra Van Vlierberghe, Polymer Chemistry & Biomaterials Group, Ghent University, Ghent, Belgium
Sophie Lerouge, Mechanical Engineering, École de Technologie Supérieure, Montreal, QC, Canada

- 5.1 It is not about YOU, it is about the review panel
Gabriela Voskerician, Biomedical Engineering and School of Medicine, Case Western Reserve University, Sunnyvale, CA, United States
- 5.2 How to realize multidisciplinary and international networking in translational research: the key to success
Xinquan Jiang, Prosthodontics, Shanghai Ninth People's Hospital, Shanghai JiaoTong University School of Medicine, Shanghai, P.R. China
- 5.3 Communicating your research with maximum impact: from networking to presenting
Rylie Green, Graduate School of Biomedical Engineering, University of NSW, Sydney, Australia
- 5.4 Regulatory issues: challenges and opportunities for young scientists
Laura C Rose, Office of Translational Science, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD, United States
- 5.5 Telling a simple story about a complex topic: The art of science communication
Hans Willems, Research Foundation Flanders, Brussels, Belgium

17:00 - 21:00 525

Affiliated Meeting ESB Meeting (by invitation only)

17:00 - 19:00 517a

Social Event Welcome Reception

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19:00 - 21:30 Meeting Point: Student Corner

Social Event Treasure Hunt (Students Only)

DAY-AT-A-GLANCE

WEDNESDAY, MAY 18, 2016

07:30 - 17:30	Viger Hall - L200	Registration Desk	Registration open
09:30 - 18:00	220bcd	Exhibits	Exhibits open
07:00 - 08:30	525	Affiliated Meeting	JBMRA Editorial Board Meeting (by invitation only)
08:30 - 09:30	517bcd		Opening Ceremonies and FBSE Awards
09:30 - 10:30	517bcd	100 Plenary	Plenary Session 1 - Fiona Watt
10:30 - 11:00	220bcd	Coffee Break	Coffee Break, Exhibits and Poster Viewing
11:00		Concurrent Sessions	
11:00 - 12:00	510a	101 General Session	Combinatorial approaches to biomaterial design
11:00 - 12:30	510b	102 General Session	Anti-infective biomaterials and device related infections
11:00 - 12:15	511e	103 General Session	Biomaterials for therapeutic delivery
11:00 - 12:45	511f	104 General Session	Biocompatibility of nanobiomaterials
11:00 - 12:45	515	105 New Frontiers Symposium	Externally-addressable smart biomaterials
11:00 - 12:30	516a	106 General Session	Computational modeling in biomaterials science and engineering
11:00 - 12:15	516c	107 New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
11:00 - 13:00	520b	108 Round Table Panel Discussion	Source of innovative ideas as the foundation for commercialization
11:00 - 12:30	518	109 New Frontiers Symposium	Glycosaminoglycan-based cell-instructive materials
11:00 - 12:30	519	110 General Session	Biomaterials and cellular signaling and programming
11:00 - 12:15	517a	111 General Session	Biomaterials in wound healing
11:00 - 12:45	520c	112 New Frontiers Symposium	Supramolecular biomaterials
11:00 - 12:15	524	113 General Session	Biomimetic materials
12:00 - 14:00		Lunch Break	Lunch, Exhibits and Poster Viewing
12:00 - 14:00	525	Affiliated Meeting	Springer Editorial Board Meeting (by invitation only)
12:30 - 13:45	517a	114 Technical Forum	Wiley - How to get your research papers accepted, read, and cited
13:30 - 16:30	513a	Affiliated Meeting	L'innovation collaborative et la recherche intersectorielle au Québec : un modèle ouvert sur le monde // Collaborative innovation and intersectoral research in Quebec: a model open to the world innovation
14:00 - 15:00		Concurrent Sessions	
14:00 - 15:00	510a	115 General Session	Biomaterials in printing
14:00 - 15:00	510b	116 General Session	Environmentally sensitive biomaterials
14:00 - 15:00	511e	117 New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
14:00 - 15:00	511f	118 General Session	Fibrosis and biomaterials
14:00 - 15:00	515	119 New Frontiers Symposium	Externally-addressable smart biomaterials
14:00 - 15:00	516a	120 General Session	Mechanobiology of cells on biomaterials
14:00 - 15:00	516c	121 General Session	Emerging concepts in biomaterials science 1
14:00 - 15:00	517a	122 General Session	Biomaterials for ophthalmic applications
14:00 - 15:00	518	123 Special Session	Japanese Society for Biomaterials (JSB) Awards
14:00 - 15:00	519	124 General Session	Biomaterials and cellular signaling and programming
14:00 - 15:00	520b	125 General Session	Cell-targeting biomaterials in theranostic delivery
14:00 - 15:00	520c	126 General Session	Biomimetic materials
14:00 - 15:00	524	127 General Session	Self-assembling micellar systems
15:00 - 16:30	220bcd	Poster Networking	Poster Session 1A and Refreshments
15:00 - 16:30	513def	Affiliated Meeting	China Foreign Business Meetings for BM Industry (by invitation only)
16:30		Concurrent Sessions	
16:30 - 18:30	510a	129 General Session	Three-dimensional fabrication
16:30 - 18:15	510b	130 General Session	Anti-infective biomaterials and device related infections
16:30 - 18:30	511e	131 General Session	Biomaterials for therapeutic delivery
16:30 - 18:30	511f	132 New Frontiers Symposium	Cell-instructive polymer matrices to direct organogenesis in vitro
16:30 - 18:30	515	133 General Session	Cellular migration and biomaterials
16:30 - 18:30	516a	134 General Session	Mechanical properties of biomaterials
16:30 - 18:30	516c	135 General Session	Emerging concepts in biomaterials science 2
16:30 - 18:30	517a	136 Special Session	ICF-BSE Fellows Session - Nanotechnology is more hype than hope
16:30 - 18:15	518	137 New Frontiers Symposium	The past, present and future in functional tendon repair and regeneration
16:30 - 18:30	519	138 New Frontiers Symposium	Biomaterials as stem cell microenvironments
16:30 - 18:30	520b	139 General Session	Biomimetic materials
16:30 - 18:30	520c	140 New Frontiers Symposium	Supramolecular biomaterials
16:30 - 18:00	524	141 New Frontiers Symposium	Biomaterials design via synthetic biology
18:30 - 21:00	TBD	Social Event	Free Evening and Student Activities
19:30 - 21:00	515	Affiliated Meeting	Chinese Biomaterials Society (CSBM) Annual General Meeting - open to members



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DETAILED PROGRAM

WEDNESDAY, MAY 18, 2016

07:30 - 17:30 Viger Hall - 200 level

Registration open

09:30 - 18:00 220bcd

Exhibits open

07:00 - 08:30 525

Affiliated Meeting

JBMRA Editorial Board Meeting (by invitation only)

08:30 - 09:30 517bcd

Social Event

Opening Ceremonies

WBC will officially kick off with a big show featuring dignitaries as well as Montreal-style entertainment. If you think that Opening Ceremonies are not worth your time, let us show you otherwise.



09:30 - 10:30 517bcd

100 - Plenary Session 1

Chairs: John Davies, Toronto, Institute of Biomaterials & Biomedical Engineering, University of Toronto, ON, Canada
Lynn Huang, Institutes of Biotechnology & Clinical Medicine, National Cheng Kung University, Tainan, Taiwan

- 100.1 Modelling the epidermal stem cell niche at single cell resolution
Fiona Watt, Centre for Stem Cells and Regenerative Medicine, King's College London, London, United Kingdom

10:30 - 11:00 220bcd

Coffee Break, Exhibits and Poster Viewing

11:00 - 12:00 510a

101 - General Session

Combinatorial approaches to biomaterial design

Chairs: Markus B Linder, Biotechnology, Aalto University, Espoo, Finland
Corinne A Hoesli, Department of Chemical Engineering, McGill University, Montréal, QC, Canada

- 11:00 101.1 A 3D microtissue array platform for high content screening of vascular drugs
Yonghui Ding, University of Colorado at Boulder, Boulder, CO, United States
- 11:15 101.2 Tough biodegradable hydrogel scaffolds prepared by stereolithography
Bas Van Bochove, Biomaterials Science and Technology, MIRA institute for Biomedical Engineering and Technical Medicine, Enschede, Netherlands
- 11:30 101.3 Stable and effective poly(ethylene glycol)-poly(beta-amino ester) nanoparticles for gene delivery
Jayoung Kim, Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States
- 11:45 101.4 Novel aqueous one-pot RAFT process for the rapid and combinatorial synthesis of complex star polymer biomaterial libraries
Steffen Cosson, Manufacturing/AIBN, Commonwealth Scientific and Industrial Research Organisation (CSIRO), UQ, Clayton, Australia

11:00 - 12:30

510b

102 - General Session

Anti-infective biomaterials and device related infections

Chairs: *Bingyun Li, Orthopaedics, West Virginia University School of Medicine, Morgantown, WV, United States*
Agnieszka L Sobczak-Kupiec, Institute of Inorganic Chemistry and Technology, Cracow University of Technology, Cracow, Poland

- 11:00 102.1 ROS-generating injectable hydrogels via dual enzyme-triggered reaction for wound infection treatment
Ki Dong Park, Department of Molecular Science and Technology, Ajou University, Suwon, Korea
- 11:15 102.2 Dual functional biodegradable membrane: a combined approach for enhanced tissue integration and antibacterial properties
Ayse Karakecli, Chemical Engineering, Ankara University, Ankara, Turkey
- 11:30 102.3 Skin permeable peptide amphiphiles as novel anti-aging and anti-microbial agents
Gujie Mi, Northeastern University, Boston, MA, United States
- 11:45 102.4 Multifunctional polymeric composites: bioactive, biodegradable, antithrombogenic and antimicrobial
Nesrin Hasirci, Chemistry Department, Middle East Technical University, Ankara, Turkey
- 12:00 102.5 Design of helix-hinge-helix peptide with promising cell selectivity and unique mode of action
Yinfeng Lyu, Northeast Agricultural University, Institute of Animal Nutrition, Harbin, P.R. China
- 12:15 102.6 Thiolene polymerizations on silicone to resist bacterial attachment
Peter E Magennis, Laboratory of Biophysics and Surface Analysis, University of Nottingham, Nottingham, United Kingdom

11:00 - 12:15

511e

103 - General Session

Biomaterials for therapeutic delivery

Chairs: *Julio San Román, Department of Polymeric Nano and Biomaterials, Institute of Polymers, Madrid, Spain*
Hasan Uludag, Chemical & Materials Engineering, University of Alberta, Edmonton, AB, Canada

- 11:00 103.1 Local engineering of the lymph node microenvironment to promote systemic, antigen-specific tolerance
Lisa H Tostanoski, Fischell Department of Bioengineering, University of Maryland, College Park, MD, United States
- 11:15 103.2 A noninvasive method to measure oxygen tension within subcutaneously transplanted bioencapsulation devices
Jonathan RT Lakey, Surgery, University of California, Irvine, CA, United States
- 11:30 103.3 Pulsatile drug delivery from microfabricated particles
Kevin J Mchugh, David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States

- 11:45 103.4 Saving Vision with Light: Photo-modulated Ocular Drug Delivery
Johan Basuki, Biomedical Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
- 12:00 103.5 Viscoprene drug delivery system for the sustained release of disulfiram for treatment of alcohol use disorder
Michael Scott Taylor, Poly-Med, Inc., Anderson, SC, United States

11:00 - 12:45

511f

104 - General Session

Biocompatibility of nanobiomaterials

Chairs: *Cristina Tanzi, Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milano, Italy*
Chengtie Wu, Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China

- 11:00 104.1 Immunostimulatory peptide biomaterials in wound healing contexts
Yalini Vigneswaran, General Surgery, University of Chicago, Chicago, IL, United States
- 11:15 104.2 Preparation of nanosheets composed of phosphorylcholine-containing polymers and the application to biocompatible coating materials
Yu Nagase, Department of Applied Chemistry, School of Engineering, Tokai University, Hiratsuka, Japan
- 11:30 104.3 Massive biotransformation of iron oxide nanoparticles within tissular spheroids: a multi-scale quantitative study
Francois Mazuel, Laboratoire Matière et Systèmes Complexes - Université Paris Diderot, Paris, France
- 11:45 104.4 Biocompatibility of a new bone substitute based on polysaccharide gel-coated OsproLife HA/TTCP granules combined with bone marrow concentrate
Marzio Piccinini, Research and Development, Eurocoating SpA, Pergine Valsugana, Italy
- 12:00 104.5 Comparing the effect of gold and silver nanoparticles on human dermal fibroblasts using Cellomics high-content screening system
Yan Huang, School of Biological Science and Medical Engineering, Southeast University, Nanjing, P.R. China
- 12:15 104.6 Biocompatible evaluation of silver nanoparticles with human bone marrow-derived mesenchymal stem cells
Wei He, School of Materials Science and Engineering, Tsinghua University, Beijing, P.R. China
- 12:30 104.7 Blood compatibility evaluations of fluorescent carbon dots
Sha Li, Department of Biomedical Engineering, Jinan University, P.R. China

11:00 - 12:45

515

105 - New Frontiers Symposium Externally-addressable smart biomaterials

Chairs: Brian P Timko, Boston Children's Hospital, Boston, MA, United States
Todd Hoare, Chemical Engineering, McMaster University, Hamilton, ON, Canada

- 11:00 105.1 Targeted and triggered drug delivery systems
Daniel Kohane, Harvard Medical School and Boston Children's Hospital, Boston, MA, United States
- 11:30 105.2 Where do multilayer microcapsules go and accumulate at systemic administration?
Gleb Sukhorukov, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- 11:45 105.3 Modulating cell activity by opto-nanomedicine
Miguel M Lino, Centre for Neurosciences and Cell Biology, University of Coimbra, Coimbra, Portugal
- 12:00 105.4 External control over drug release using microgel- and SPION-laden nanocomposite hydrogels
Scott B Campbell, Department of Chemical Engineering, McMaster University, Hamilton, ON, Canada
- 12:15 105.5 Light-activatable polymeric nanoparticles for intracellular delivery in cancer stem cells
Emanuel N Quartin Costa, UC-Biotech, CNC, University of Coimbra, Cascais, Portugal
- 12:30 105.6 Poly(glyoxylates): a new class of depolymerizable materials with amplified response to stimuli and applications in drug delivery
Elizabeth R Gillies, Chemistry, The University of Western Ontario, London, ON, Canada

11:00 - 12:30

516a

106 - General Session Computational modeling in biomaterials science and engineering

Chairs: Jacobus JC Arts, Orthopaedic Surgery, Maastricht University Medical Centre, Maastricht, Netherlands
Loreto M Valenzuela Roediger, Chemical and Bioprocessing Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile

- 11:00 106.1 Helical spring design optimization for endoscopic devices using a design-of-experiments approach
Hamid Ebrahimi, University of Toronto, Toronto, ON, Canada
- 11:15 106.2 Finite element analysis of bioresorbable polymers using a thermo-mechanical co-simulation model
Rosa Shine, College of Engineering and Informatics, National University of Ireland Galway, Galway, Ireland
- 11:30 106.3 Bioactive glass can potentially reinforce large bone defects
Jacobus JC Arts, Orthopaedic Surgery, Maastricht University Medical Centre, Maastricht, Netherlands

- 11:45 106.4 Application of a flow evolution network model for stress-strain predictions in absorbable coronary stents
Maureen L Dreher, Office of Science and Engineering Laboratories/ Division of Applied Mechanics, Center for Devices and Radiological Health (FDA), Silver Spring, MD, United States
- 12:00 106.5 Identification of preferential sites for intra-molecular lysine-arginine derived advanced glycation end products formation in fibrillar type I collagen and their effect on the function of collagenous tissues: an all atom molecular dynamics approach
Thomas A Collier, Department of Chemistry, University College London, London, United Kingdom
- 12:15 106.6 Energetic, morphologic, and mechanistic elucidation of the molecular attributes inherent to multi-elemental biomaterial archetypes: construction of a unique *in vitro in vivo ex vivo* in silico correlation via atomistic simulations
Pradeep Kumar, Pharmacy and Pharmacology/Wits Advanced Drug Delivery Platform, University of the Witwatersrand, South Africa

N/A

11:00 - 12:15

516c

107 - New Frontiers Symposium Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By: 

Chairs: Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal
Lei Yang, Orthopaedic Institute, Soochow University, Suzhou, P.R. China

- 11:00 107.1 15 years of commercializing medical devices using nanotechnology
Thomas J. Webster, Chemical Engineering, Northeastern University, Boston, MA, United States
- 11:30 107.2 Biocompatible and highly homogenous graphene-hydroxyapatite hydrogel for bone tissue engineering
Marta Cerruti, Mining and Materials Engineering, McGill University, Montreal, Canada
- 11:45 107.3 Engineering bio-inspired surface microstructures to control bacterial adhesion and biofilm growth
Benjamin D Hatton, Materials Science and Engineering, University of Toronto, Toronto, ON, Canada
- 12:00 107.4 Bolstered cell proliferation by supramolecular assemblies of biodegradable biocompatible block copolymers
Kazuki Fukushima, Department of Polymer Science and Engineering, Yamagata University, Yonezawa, Japan

11:00 - 13:00

520b

108 - Round Table Panel Discussion

Source of innovative ideas as the foundation for commercialization

Sponsored By:



Chairs: Jeffrey M Karp, Medicine, Brigham and Women's Hospital, Cambridge, MA, United States
Yunbing Wang, Sichuan University, Chengdu, P.R. China

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|-------|---|-----|
| 108.1 | Youngjoo Koh, Medical Device Research, Samyang Biopharmaceuticals Co., Daejeon, Korea | N/A |
| 108.2 | David Mooney, Harvard University, Cambridge, MA, United States | N/A |
| 108.3 | Pieter Wolters, DSM Venturing, Royal DSM, Cambridge, MA, United States | N/A |
| 108.4 | Allen Eaves, Stemcell Technologies Inc., Vancouver, BC, Canada | N/A |

11:00 - 12:30

518

109 - New Frontiers Symposium

Glycosaminoglycan-based cell-instructive materials

Chairs: Uwe Freudenberg, Institute Biofunctional Polymer Materials / Max Bergmann Center of Biomaterials Dresden, Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany
Monica Serban, Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT, United States

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|-------|-------|---|
| 11:00 | 109.1 | Synthesizing dynamic biomaterial matrices through the controlled incorporation of glycosaminoglycans
Kristi Anseth , Chemical and Biological Engineering, University of Colorado, Boulder, CO, United States |
| 11:30 | 109.2 | Spatiotemporal control over hydrogel viscoelasticity towards stem cell mechanobiology
Steven R Caliali , BioEngineering, University of Pennsylvania, Philadelphia, PA, United States |
| 11:45 | 109.3 | Modulating plasticity of primary human macrophages by extracellular matrix signals of biomimetic 3D matrices
Sandra Franz , Department of Dermatology, Venerology and Allergology, University Leipzig, Leipzig, Germany |

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| 12:00 | 109.4 | Switching of growth factor binding on heparin-functionalized thermoresponsive surface for hepatocyte sheet manipulation with maintenance of hepatic functions
Jun Kobayashi , Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan |
| 12:15 | 109.5 | Modulation of GAG-sulfation pattern in biohybrid hydrogels to tune growth factor release
Passant Atallah , Leibniz Institute for Polymer Research Dresden, Dresden, Germany |

11:00 - 12:30

519

110 - General Session

Biomaterials and cellular signaling and programming

Chairs: Evelyn Yim, Chemical Engineering, University of Waterloo, Waterloo, ON, Canada
Ying Yang, Institute for Science and Technology in Medicine, Keele University, Newcastle-under-Lyme, United Kingdom

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|-------|-------|---|
| 11:00 | 110.1 | Multivalent nanomaterial arrays leverage antigen specificity to modulate immune response in autoimmune disease
Brittany L Hartwell , Bioengineering, Lawrence, KS, United States |
| 11:15 | 110.2 | Structural extracellular matrix contributions to breast tumorigenesis
Karin Wang , Department of Environmental Health (MIPS), Harvard School of Public Health, Boston, MA, United States |
| 11:30 | 110.3 | Micropatterns of BMP-2 without or within fibronectin on soft biopolymeric films regulate myoblast shape and SMAD signaling
Thomas Boudou , CNRS, Grenoble Institute of Technology, Grenoble, France |
| 11:45 | 110.4 | A bioengineered 3D approach to mimic the tumor-stroma microenvironment of ovarian cancer
Dietmar W. W Hutmacher , Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia |
| 12:00 | 110.5 | Integrin specific hydrogels as lymphoid tumors organoids for B cell receptor signaling and drug resistance
Ankur Singh , Mechanical Engineering, Cornell University, Ithaca, United States |
| 12:15 | 110.6 | Study of breast cancer metastasis in vitro using a 3D tissue scaffold
Gowri M Balachander , Center for Biosystems Science and Engineering, Indian Institute of Science, Bangalore, India |

11:00 - 12:15

517a

111 - General Session

Biomaterials in wound healing

Chairs: Aziz Ghahary, Surgery/ Plastic, British Columbia, Vancouver, BC, Canada

Liam M. Grover, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom

11:00 111.1 Double network hydrogels of poly acrylic acid/pluronic f127 for topical nitric oxide delivery
Marcelo G de Oliveira, Institute of Chemistry, University of Campinas, Campinas, Brazil

11:15 111.2 Bioactive glasses particles direct fibroblast towards better wound healing
Xiaoling Fu, South China University of Technology, Guangzhou, P.R. China

11:30 111.3 Biodegradable polyester-urethane bilayered systems for wound healing. an in vitro / in vivo correlation for dressings based on hydrophilic and amphiphilic systems.
Julio San Román, Department of Polymeric Nano and Biomaterials, Institute of Polymers, Madrid, Spain

11:45 111.4 Combination of low-temperature plasma processes in the design of a novel ampicillin-loaded surgical mesh for hernia repair
Cristina Canal, Biomaterials Biomechanics and Tissue Engineering Group, Technical University of Catalonia, Barcelona, Spain

12:00 111.5 Gene-activated matrix for in situ regeneration of skin: from structure to function
Lie Ma, Zhejiang University, Hangzhou, P.R. China

11:00 - 12:45

520c

112 - New Frontiers Symposium

Supramolecular biomaterials

Chairs: Matthew Webber, Koch Institute, MIT, Cambridge, United States
Patricia YW Dankers, Institute for Complex Molecular Systems, Eindhoven University of Technology, Eindhoven, Netherlands
Eric A Appel, Department of Materials Science & Engineering, Stanford University, Stanford, CA, United States

11:00 112.1 Bioactive and dynamic supramolecular biomaterials
Samuel I Stupp, Simpson Querrey Institute, Northwestern University, Chicago, IL, United States

11:30 112.2 Surface potentials determine the potency of supramolecular nanofibrous vaccines
Yi Wen, Department of Biomedical Engineering, Duke University, Durham, NC, United States

11:45 112.3 Hierarchical porous structures induced in supramolecular guest-host hydrogels
Christopher B Rodell, Bioengineering, University of Pennsylvania, Philadelphia, PA, United States

12:00 112.4 Collagen hybridizing peptide: self-assembly and denatured collagen targeting
Michael Yu, Bioengineering, University of Utah, Salt Lake City, UT, United States

12:15 112.5 Control and reconstruction of reacted functionalities on supramolecular material surfaces
Olga Goor, Institute for Complex Molecular system, Eindhoven, Netherlands

12:30 112.6 Exploiting the supramolecular self-assembly of β -sheet forming peptides to design tailored 3D cell niches
A Saiani, School of Materials, University of Manchester, Manchester, United Kingdom

11:00 - 12:15

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113 - General Session

Biomimetic materials

Chairs: Serena M Best, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
Adam J Engler, Bioengineering, University of California San Diego, La Jolla, CA, United States

11:00 113.1 Synthetic matrix vesicles for osteoconduction and osteoinduction
Tolulope Akinade, Biomedical Engineering, Columbia University, New York, NY, United States

11:15 113.2 Staged tumorigenesis-mimicking matrices as in vitro extracellular matrix models for the comprehensive study of tumor chemoresistance expression mechanism
Takashi Hoshiba, Yamagata University, Yonezawa, Japan

11:30 113.3 The effect of biomimetic proteoglycans on collagen self-assembly
Tao Yang, Material Science and Engineering, Drexel University, Philadelphia, PA, United States

11:45 113.4 Rational design of keratin-based injectable hydrogels for biomedical applications
Najeong Park, AJOU university, Suwon, Korea

12:00 113.5 Impact of peptides micro-patterning on endothelial progenitors and endothelial mature cells
Caroline Royer, Université Bordeaux, CBMN Chimie et Biologie des membranes et nano-objets, Pessac, France

12:00 - 14:00

Lunch, Exhibits, Poster Viewing

12:00 - 14:00

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Affiliated Meeting (by invitation only)

Springer Editorial Board Meeting

12:30 - 13:45

517a

114 - Technical Forum

How to get your research papers accepted, read, and cited

Sponsored By: 

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|-------|--|
| 114.1 | James M Anderson , Pathology, Case Western Reserve University, Cleveland, OH, United States N/A |
| 114.2 | Jeremy Gilbert , Syracuse Biomaterials Institute, Department of Biomedical and Chemical Engineering, Syracuse University, Syracuse, United States N/A |
| 114.3 | Lorna Stimson , Global Research, Wiley, Weinheim, Germany N/A |

13:30 - 16:30 513a

Affiliated Meeting

L'innovation collaborative et la recherche intersectorielle au Québec : un modèle ouvert sur le monde • Collaborative innovation and intersectoral research in Quebec: a model open to the world innovation

14:00 - 15:00 510a

115 - General Session Biomaterials in printing

Chairs: **Brendan Harley**, Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
Timothy C Hughes, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton South, Australia

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| 14:00 | 115.1 Biodegradable and photocurable elastomers for 3D printing
Yi-Cheun Yeh , Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, United States |
| 14:15 | 115.2 Development of thermoplastic ternary composites and hydrogels for additive manufacturing of scaffolds for regeneration of osteochondral defect
Joanna Maria Idaszek , Faculty of Material Science and Engineering, Warsaw University of Technology, Warsaw, Poland |
| 14:30 | 115.3 Thiol-ene cross-linked polyglycidol - hyaluronic acid hybrid hydrogels: preparation, cell loading, 3D printing, and in vivo evaluation
Simone Stichler , Department for Functional Materials in Medicine and Dentistry, University of Wuerzburg, Wuerzburg, Germany |
| 14:45 | 115.4 Biocompatibility of FDM printed PEEK is comparable to cranial bone properties; FDM printed PEEK is thereby a suitable Material for cranial implants
Ute E Schaefer , Medical University Graz, Graz, Austria |

14:00 - 15:00 510b

116 - General Session

Environmentally sensitive biomaterials

Chairs: **Chien-Chi Lin**, Biomedical Engineering, Indiana University-Purdue University, Indianapolis, IN, United States
Akihiko Kikuchi, Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan

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| 14:00 | 116.1 Biodegradable anhydride-based reconfigurable shape memory elastomer
Melodie I Lawton , Chemical and Biomedical Engineering, Syracuse University, Syracuse, NY, United States |
| 14:15 | 116.2 Biologically stimuli-responsive polymeric particles with dynamic crosslinks toward smart drug delivery
Takashi Miyata , Department of Chemistry and Materials Engineering, Kansai University, Suita, Osaka, Japan |
| 14:30 | 116.3 Thermoplastic biodegradable shape memory elastomeric composites by dual-electrospinning
Erin McMullin , Department of Biomedical and Chemical Engineering, Syracuse University, Syracuse, NY, United States |
| 14:45 | 116.4 Dynamically control endothelial cells life via matrix metalloproteases sensitive polyelectrolyte films with controlled stiffness
Mi Hu , MOE Key Laboratory of Macromolecular Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, HangZhou, P.R. China |

14:00 - 15:00 511e

117 - New Frontiers Symposium

Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By: 

Chairs: **Huinan Liu**, Department of Bioengineering, University of California at Riverside, Riverside, CA, United States
Lei Yang, Orthopaedic Institute, Soochow University, Suzhou, P.R. China

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| 14:00 | 117.1 Self-assembled cationic biodegradable nanoparticles from a new family of pH-responsive Amino Acid-based Poly(ester urea urethane) and their application as a doxorubicin delivery vehicle
Ying Ji , Department of Fiber Science and Apparel Design, Cornell University, Ithaca, NY, United States |
| 14:15 | 117.2 Improvements in the resolution of the foreign body reaction by the modulation of macrophage polarization towards an M2 phenotype at the tissue-implant interface by local release of IL-4 from layer by layer coated polypropylene meshes
Daniel Hachim , Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States |

- 14:30 117.3 Modified gas foaming for fabrication of three-dimensional electrospun nanofiber scaffolds
Jingwei Xie, Surgery, University of Nebraska Medical Center, Omaha, NE, United States
- 14:45 117.4 Electrospun pure chitosan nanofibrous mats with high structural stability for dura mater regeneration
Yuandong Dou, Yantai Zhenghai Bio-tech Co., Ltd, Yantai, P.R. China

14:00 - 15:00 511f

118 - General Session Fibrosis and biomaterials

Chairs: **J.M. Oliveira**, Department of Polymer Engineering, 3B's research Group, Guimarães, Portugal
Ketul C Popat, Mechanical Engineering, Colorado State University, Fort Collins, CO, United States

- 14:00 118.1 Modification of fibrocyte responses to diminish biomaterial-mediated fibrotic tissue responses
Liping Tang, University of Texas at Arlington, Arlington, TX, United States
- 14:15 118.2 Characterization of biomaterial-tissue interactions in their three-dimensional context - an in vivo study
Willi L Wagner, Department of Pathology, University Medical Center Mainz, University of Regensburg, Heidelberg, Germany
- 14:30 118.3 Investigation of anti-fibrotic effects of capsaicin and prostaglandin E-2 on poly(lactic-co-glycolic) acid (PLGA) induced fibrosis.
Tich H Truong, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- 14:45 118.4 Regulation of foreign body reaction using nanofibers and microRNAs
Junquan Lin, School of Chemical and Biomedical Engineering, Division of Bioengineering, Nanyang Technological University, Singapore, Singapore

14:00 - 15:00 515

119 - New Frontiers Symposium Externally-addressable smart biomaterials

Chairs: **Scott B Campbell**, Department of Chemical Engineering, McMaster University, Hamilton, ON, Canada
Brian P Timko, Boston Children's Hospital, Boston, MA, United States

- 14:00 119.1 Photothermally-responsive fibrin gels
Chase S Linsley, Bioengineering, University of California, Los Angeles, CA, United States
- 14:15 119.2 Remotely controlled mechanotransduction via magnetic nanoparticles: applications for injectable cell therapies
Hareklea Markides, Bio Magnetics Group, Keele University, Staffordshire, United Kingdom

- 14:30 119.3 Optogenetic light-tunable extracellular matrix
Maximilian Hörner, Faculty of Biology, BIOS, University of Freiburg, Breisgau, Germany
- 14:45 119.4 Visible-light induced cell detachment system using smart fluoropolymer-coated surface
Masamichi Nakayama, Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan

14:00 - 15:00 516a

120 - General Session Mechanobiology of cells on biomaterials

Chairs: **Michael Sacks**, ICES, Austin, TX, United States
Henry Yu, Department of Physiology, National University of Singapore, Singapore, Singapore

- 14:00 120.1 Integrin alpha 6 and calpain 2 are mechanosensitive proteins in breast cancer
Alyssa D Schwartz, Chemical Engineering, University of Massachusetts Amherst, Sunderland, MA, United States
- 14:15 120.2 An active contraction model of the valvular interstitial cell
Michael Sacks, ICES, Austin, TX, United States
- 14:30 120.3 Unraveling the role of cyclic mechanical stimulation on smooth muscle cells in vitro
Nina Bono, Laval University, Quebec City, QC, Canada
- 14:45 120.4 Dynamic polymer substrates with increasing stiffness for regulating smooth muscle cells
Shanfeng Wang, Department of Materials Science and Engineering, and Institute of Biomedical Engineering, The University of Tennessee, Knoxville, TN, United States

14:00 - 15:00 516c

121 - General Session Emerging concepts in biomaterials science 1

Sponsored By:



Chair: **Kam W Leong**, Department of Biomedical Engineering, Columbia University, New York, NY, United States

- 14:00 121.1 Infection-fighting materials
Andres J Garcia, Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- 14:25 121.2 Biomaterials strategies to enhance the therapeutic potential of human neural stem cells for brain tissue regeneration
Hai-Quan Mao, Institute for NanoBioTechnology, Johns Hopkins University, Baltimore, MD, United States

14:00 - 15:00 517a

122 - General Session Biomaterials for ophthalmic applications

Chairs: *Lauren A Costella, Biomedical Technologies Group, Luna Innovations, Charlottesville, VA, United States*
Sei Kwang Hahn, Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea

- 14:00 122.1 Dual hydrophobe and phenylboronic acid-grafted poly(vinylpyrrolidone) polymers as shear-thinning and mucoadhesive eyedrop formulations
Todd Hoare, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- 14:15 122.2 Evaluation of the corneal endothelial cell monolayer formation on synthetic guttata micro-structures to study the feasibility of corneal cell therapy
Muhammad Rizwan, National University of Singapore, Singapore, Singapore
- 14:30 122.3 Bioorthogonal tissue engineering approaches for reevaluation of donor corneas
Carsten Werner, Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research Dresden and TU Dresden, Dresden, Germany
- 14:45 122.4 Bioengineering corneal endothelial and stromal tissues using nanostructured ECM protein scaffolds
Rachelle N Palchesko, Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States

14:00 - 15:00 518

123 - Special Session Japanese Society for Biomaterials (JSB) Awards

Chairs: *Kunio Ishikawa, Department of Biomaterials, Kyushu University, Fukuoka, Japan*
Tetsuji Yamaoka, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute (NCVC), Suita, Japan

- 123.1 Development of octacalcium phosphate bone substitute material and its elucidation of osteoconductivity mechanism
Osamu Suzuki, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan
- 123.2 Construction of three-dimensional tissues with capillary networks by controlling cell microenvironments
Michiya Matsusaki, Department of Applied Chemistry, Osaka University, Graduate School of Engineering, Osaka, Japan
- 123.3 Design of Shape-memory Biomaterials for Cell Mechanobiology
Mitsuhiro Ebara, National Institute for Materials Science (NIMS), Tsukuba, Japan N/A

14:00 - 15:00 519

124 - General Session Biomaterials and cellular signaling and programming

Chairs: *Ryan G Wylie, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada*
Masaru Tanaka, Chemistry, Institute of Chemistry, Fukuoka, Japan

- 14:00 124.1 Biodegradable monodisperse oblate and prolate ellipsoidal artificial antigen presenting cells for antigen specific T-Cell activation
Randall A Meyer, Johns Hopkins University, Baltimore, MD, United States
- 14:15 124.2 Strategies to maintain acinar cell phenotype in vitro utilizing poly(ethylene glycol) hydrogels
Andrew D Shubin, Department of Biomedical Engineering, University of Rochester, Rochester, NY, United States
- 14:30 124.3 DNA-mediated cell-cell attachment studied using supported lipid bilayers
Yusuke Arima, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan
- 14:45 124.4 The control of mesenchymal stem cell differentiation using matrix and induction media
Jing He, Sichuan university, Chengdu, P.R. China

14:00 - 15:00 520b

125 - General Session Cell-targeting biomaterials in theranostic delivery

Chairs: *Brooke Farrugia, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia*
Sung Yun Yang, Polymer Engineering, Chungnam National University, Daejeon, Korea

- 14:00 125.1 Bioluminescence activated by Antibody-enzyme fragment complementation following target engagement
Shawn C Owen, Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT, United States
- 14:15 125.2 Biodegradable silica nanoparticles containing zinc for selective cancer therapy
Shu Chen, Department of Materials, Imperial College London, London, United Kingdom
- 14:30 125.3 Tumor-targeting upconversion-nanoparticle-based unimolecular micelles for simultaneous chemotherapy, photodynamic therapy, and fluorescence imaging for neuroendocrine cancer therapy
Shaoqin Gong, University of Wisconsin-Madison, Madison, WI, United States
- 14:45 125.4 A new lysosomal-targeted photosensitizer based on BODIPY for photodynamic therapy
Dong Yun Lee, Bioengineering, Hanyang University, Seoul, Korea

14:00 - 15:00 520c

126 - General Session

Biomimetic materials

Chair: Richard Williams, School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University, Bundoora, Australia
Dong Keun Han, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea

- 14:00 126.1 Cell response on collagen-edc scaffolds for potential dermal application
María L Del Prado-Audelo, Metallics and Ceramics, Instituto de Investigaciones en Materiales, UNAM, Mexico, Mexico
- 14:15 126.2 Long term implantation of silk fibroin nanofiber in rabbit cornea as a scaffold for corneal stromal regeneration
Hisatoshi Kobayashi, The International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Tsukuba, Japan
- 14:30 126.3 Electrospun polyurethane and hydrogel composite scaffolds as biomechanical mimics for aortic valve tissue engineering
Daniel S Puperi, Department of Bioengineering, Rice University, Houston, TX, United States
- 14:45 126.4 Modular ECM-mimicking substrate as a directional delivery system to hydrogels for 3D microenvironment control
Julien Barthes, Fundamental research, PROTIP Medical SAS, Strasbourg, France

14:00 - 15:00 524

127 - General Session

Self-assembling micellar systems

Chairs: Marcelo G de Oliveira, Institute of Chemistry, University of Campinas, Campinas, Brazil
Sanjeeva Murthy, New Jersey Center for Biomaterials, Rutgers University, New Jersey, United States

- 14:00 127.1 Traceable polymeric micelles for tumour targeted drug and siRNA delivery
Afsaneh Lavasanifar, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada
- 14:15 127.2 Immobilization of polymersome in hydrogels via host-guest complexation for triggered drug delivery
Meiling Zhu, Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong, Hong Kong
- 14:30 127.3 Topical drug delivery by hyaluronan polymeric micelles
Daniela Smejkalova, Nano-carrier Development Group, Contipro Pharma, Dolni Dobrouc, Czech Republic
- 14:45 127.4 Biodegradable multiblock polyurethane for controlled delivery applications
Hong Tan, College of Polymer Science and Engineering, State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu, P.R. China

15:00-16:30 220bcd

Poster Viewing Session 1A

See page 158

15:00 - 16:30 513def

Affiliated Meeting

China foreign business meetings for BM industry (by invitation only)

16:30 - 18:30 510a

129 - General Session

Three-dimensional fabrication

Chairs: Keith Mclean, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
Syam Nukavarapu, Orthopedic Surgery and Biomedical Engineering, University of Connecticut Health Center, Farmington, CT, United States

- 16:30 129.1 Textile tissue engineering: a path towards organ weaving
Ali Khademhosseini, Harvard/ Massachusetts Institute of Technology, Cambridge, MA, United States
- 16:45 129.2 Low-temperature fabrication of porous ceramic/starch composite scaffolds for drug delivery and bone tissue engineering
Changlu Xu, Soochow University, Orthopaedic Institute, The First Affiliated Hospital, Soochow University, Suzhou, P.R. China
- 17:00 129.3 Additive manufacturing of flexible bio-ceramic scaffolds
Zachary Fishman, Orthopedic Biomechanics Lab, Institute of Biomaterials & Biomedical Engineering, Toronto, ON, Canada
- 17:15 129.4 Continuous 3D Printing of different diameter microscale Polycaprolactone Filaments
Paul Dalton, University of Würzburg, Würzburg, Germany
- 17:30 129.5 A single-body polymeric heart valves obtained by an innovative combined technology
Giorgio Soldani, Laboratory for Biomaterials and Graft Technology, Istituto di Fisiologia Clinica - Sede di Massa, Massa, Italy
- 17:45 129.6 Stereolithography-based 3D printing of micro-channels for vascularized hydrogels
Rujing Zhang, Department of Micro- and Nanotechnology, Technical University of Denmark, Copenhagen, Denmark
- 18:00 129.7 An easy-to-use and versatile method for building cell-laden microfibres
Jean-Christophe Fricain, Institut National de la Santé et de la Recherche Médicale, Bordeaux, France
- 18:15 129.8 3D printing structures with a cell bearing gelatin bioink and transglutaminase crosslinking
Scott A Irvine, School of Materials Science and Engineering, Nanyang Technological University, Singapore

16:30 - 18:15

510b

130 - General Session

Anti-infective biomaterials and device related infections

Chairs: A Saiani, School of Materials, University of Manchester, Manchester, Conrado Aparicio, Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, MN, United States

- 16:30 130.1 FHA-Ag coating on magnesium: a potential way to enhance corrosion resistance as well as antibacterial property
Peng Hou, Shanghai 6th Hospital, Shanghai, P.R. China
- 16:45 130.2 Hydrothermal and plasma treatments drastically reduce bacterial adhesion to Ti-based materials used in medicine
Martina Lorenzetti, Department for Nanostructured Materials, Jožef Stefan Institute, Ljubljana, Slovenia
- 17:00 130.3 Efficacy and mechanism of selenium nanoparticles as antibacterial agents
Michelle LA Stolozoff, Northeastern University, Boston, MA, United States
- 17:15 130.4 Anti-bacterial surface coating on metallic biomaterials by simple electrochemical surface treatment
Yusuke Tsutsumi, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- 17:30 130.5 Controlled delivery of antibiotics from silica nanocarriers for acrylic bone cement applications
Polina Prokopovich, School of Pharmacy, Cardiff University, Cardiff, United Kingdom
- 17:45 130.6 Dental implant with antibacterial and bone cell stimulating properties
Cornelia Wolf-Brandstetter, Max Bergmann Center of Biomaterials, TU Dresden, Institute of Materials Science, Max Bergmann Center of Biomaterials, Dresden, Germany
- 18:00 130.7 Efficacy of antimicrobial impregnated urinary catheter in thwarting foreign body associated urinary tract infections caused by *Pseudomonas aeruginosa*
Hina Saini, Department of Microbiology, Panjab University, Chandigarh, India

16:30 - 18:30

511e

131 - General Session

Biomaterials for therapeutic delivery

Chairs: Danielle SW Benoit, Biomedical Engineering, University of Rochester, Rochester, NY, United States
Min Wang, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong

- 16:30 131.1 Targeting integrin beta-1 to reduce attachment and migration of breast cancer cells
Daniel Nisakar Meenakshi Sundaram, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada
- 16:45 131.2 Enzymatically-responsive poly(ethylene glycol) hydrogels for the controlled delivery of therapeutic peptides
Danielle SW Benoit, Biomedical Engineering, University of Rochester, Rochester, NY, United States
- 17:00 131.3 The influence of biomaterial based growth factor delivery on the regeneration of skeletal muscle after clinically relevant crush trauma
Taimoor Hasan Qazi, Julius Wolff Institute, Charité Universitätsmedizin Berlin, Berlin, Germany
- 17:15 131.4 Photo-regulated insulin delivery from glucose-responsive core-shell microspheres prepared by two-step high-speed shear-emulsions
Ruixue Yin II, Mechanical and Power Engineering, East China University of Science and Technology, Shanghai, P.R. China
- 17:30 131.5 An injectable and thermosensitive hydrogel capable of delivering basic fibroblast growth factor to control cardiac fibrosis
Zhaobo Fan, The Ohio State University, Columbus, OH, United States
- 17:45 131.6 Microneedle-array patches loaded with hypoxia-sensitive vesicles for rapid glucose-responsive insulin delivery
Zhen Gu, Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, North Carolina State University, Raleigh, NC, United States
- 18:00 131.7 Development of the novel protein PEGylation reagent with high protein activity
Yutaka Ikeda, University of Tsukuba, Tsukuba, Japan
- 18:15 131.8 Dual gelation enables delayed antibody release from Diels-Alder hydrogels
Manuel Gregoritz, Pharmaceutical Technology, University of Regensburg, Regensburg, Germany

16:30 - 18:30

511f

132 - New Frontiers Symposium

Cell-instructive polymer matrices to direct organogenesis in vitro

Sponsored By: 

- Chairs:* Carsten Werner, Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research Dresden and TU Dresden, Dresden, Germany
 Claudia Fischbach-Teschl, Meinig School of Biomedical Engineering, Cornell University, Ithaca, NY, United States
-
- 16:30 132.1 Fully defined matrices for the culture and expansion of intestinal stem cells and organoids
Matthias Lutolf, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
-
- 17:00 132.2 Human pluripotent stem cell-derived neural tissue models for neurotoxicity screening
William Murphy, University of Wisconsin, Madison, WI, United States
-
- 17:15 132.3 Self-organizing human cardiac organogenesis controlled by patterned substrata
Zhen Ma, Bioengineering, University of California, Berkeley, CA, United States
-
- 17:30 132.4 Biohybrid hydrogels enable defined 3D cultures of human cortical neurons N/A
Caghan Kizil, AG Kizil, German Centre for Neurodegenerative Diseases (DZNE), Dresden, Germany
-
- 17:45 132.5 Minimal matrix models of scars with fractal heterogeneity modulate stiff-niche stem-cell responses via nuclear exit of a mechanorepressor
Dennis E Discher, University of Pennsylvania, Philadelphia, PA, United States
-
- 18:00 132.6 In vitro construction of vascularized iPSC-derived 3D-cardiac myoblast tissues for drug assessment
Michiya Matsusaki, Department of Applied Chemistry, Osaka University, Graduate School of Engineering, Osaka, Japan
-
- 18:15 132.7 Dynamically stiffening hydrogels differentially modulates malignant transformation of mammary epithelial cells
Adam J Engler, Bioengineering, University of California San Diego, La Jolla, CA, United States

16:30 - 18:30

515

133 - General Session

Cellular migration and biomaterials

Chairs: Nicholas P Ziats, Pathology, Case Western Reserve University, Cleveland, OH, United States
 George Petrov Altankov, Molecular Dynamics at Cell-Biomaterials Interface, Institute for Bioengineering of Catalonia, Barcelona, Spain

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- 16:30 133.1 Utilization of 3D micropatterned collagen models to study lung adenocarcinoma invasion
Sydney M Gibson, Bioengineering, Rice University, Houston, TX, United States
-
- 16:45 133.2 Triggering cancer cell invasion at extracellular matrix interfaces
Tilo Pompe, Institute of Biochemistry, Universität Leipzig, Leipzig, Germany
-
- 17:00 133.3 Tuning collagen scaffold interconnectivity for optimized cell migration
Jennifer C Ashworth, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
-
- 17:15 133.4 Protease degradable, hyaluronic acid based hydrogels provide a platform for breast cancer cell invasion
Stephanie A Fisher, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
-
- 17:30 133.5 Quantifying the effect of hyaluronic acid on the invasive phenotype of glioma within gelatin hydrogels
Jee-Wei E Chen, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
-
- 17:45 133.6 Controlling keratinocyte activity by LL-37 conjugated nanoparticles
Michela Comune, Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal
-
- 18:00 133.7 Persistence of motile cells is a matrix-rigidity-dependent process that requires alpha5beta1 integrin engagement
Sylvain Gabriele, University of Mons, Mons, Belgium
-
- 18:15 133.8 Endothelialization on NiTi wire with immobilization of collagen using HMDI
Tomohito Watanabe, Tohoku University, Sendai, Japan

16:30 - 18:30

516a

134 - General Session

Mechanical properties of biomaterials

Chairs: Elizabeth KE Tanner, School of Engineering, University of Glasgow, Glasgow, United Kingdom

L. D. Timmie Topoleski, Mechanical Engineering, University of Maryland, Baltimore County (UMBC), Baltimore, MD, United States

- 16:30 134.1 Micro-computed tomography: a tool to study the fracture behaviour of calcium phosphate cements
Sara Gallinetti, Division of Applied Materials Science, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden
- 16:45 134.2 Evolution of tensile properties of UHMWPE after short residence times in the melt state followed by high pressure molding
Anuj Bellare, Orthopedic Surgery, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States
- 17:00 134.3 Wear simulator testing of reverse total shoulder arthroplasty implants
John B Medley, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, Canada
- 17:15 134.4 The influence of kinematics on the wear of cross-linked polyethylene in the knee
Louise M Jennings, Institute of Medical & Biological Engineering, University of Leeds, Leeds, United Kingdom
- 17:30 134.5 Compliance study in both stented and unstented zones of endovascular stent-grafts incorporated with polyester and polyurethane grafts
Ying Guan, Donghua University, Shanghai, P.R. China
- 17:45 134.6 Mechanical properties of bioactive glass putty materials
Nicole AP Van Gestel, Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands
- 18:00 134.7 Microstructural evaluation and mechanical properties of a directionally solidified HCP/FCC Co-Cr alloy for biomedical applications
Ana L Ramirez-Ledesma, Metales y Cerámicos, Instituto de Investigaciones en Materiales, UNAM, Distrito Federal, Mexico
- 18:15 134.8 Passive mechanical properties of polymer-coated cells for high speed sorting using Antigen Specific Lysis (ASL)
Xuan Qu, Chemical and Materials Engineering, University of Kentucky, Lexington, KY, United States

16:30 - 18:30

516c

135 - General Session

Emerging concepts in biomaterials science 2

Sponsored By:



Chair: Kam W Leong, Department of Biomedical Engineering, Columbia University, New York, NY, United States

- 16:30 135.1 Mechanobiology approach to understanding causative mechanism of cellular responses to biomaterials: an example of bile canaliculi dynamics in collagen sandwich culture of hepatocytes and in vivo
Hanry Yu, Department of Physiology, National University of Singapore, Singapore, Singapore
- 16:55 135.2 Engineering patient specific neural tissue using cell permeable transcription factors
Stephanie Willerth, Mechanical Engineering/Medical Engineering, University of Victoria, Victoria, Canada
- 17:10 135.3 Development of tannic acid and catalase-based hollow polymer capsules to prevent oxidative stress and modulate extracellular matrix activity in interleukin-1beta induced inflammation model of nucleus pulposus
Aitor Larrañaga, Centre for Research in Medical Devices, Galway, Ireland
- 17:25 135.4 Glycomaterials for immunomodulation via affinity-dependent regulation of soluble lectin bioactivity
Gregory A Hudalla, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- 17:40 135.5 Vascularly targeted platelet-inspired clot-responsive nanomedical system for targeted thrombolysis
Anirban Sen Gupta, Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States
- 17:55 135.6 Predictive tools for protein-based biomaterials: elastic molecular modifications and higher-order assembly
Giselle C Yeo, University of Sydney, Sydney, Australia
- 18:10 135.7 Multimodal analysis of morphology-dependent nanomaterial biodistributions
Evan A Scott, Biomedical Engineering, Northwestern University, Chicago, IL, United States

16:30 - 18:30

517a

136 - Special Session

ICF-BSE Fellows Session

Nanotechnology is more hype than hope

Chairs: Joachim B Kohn, New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, United States

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|-------|--|-----|
| 136.1 | Michael V Sefton , Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada | N/A |
| 136.2 | John Hunt , Director of U.K. Centre for Tissue Engineering and Head of Unit of Clinical Engineering, Institute of Ageing and Chronic Disease, Liverpool, United Kingdom | N/A |
| 136.3 | John Kao , Biomedical Engineering, College of Engineering, University of Wisconsin-Madison, Madison, WI, United States | N/A |
| 136.4 | Antonietta M Gatti , ISTEC, National Council of Research of Italy, San Vito, Italy | N/A |
| 136.5 | Liping Tang , University of Texas at Arlington, Arlington, TX, United States | N/A |
| 136.6 | Joëlle Amedee , University of Bordeaux, Inserm, Bordeaux, France | N/A |

16:30 - 18:15

518

137 - New Frontiers Symposium

The past, present and future in functional tendon repair and regeneration

*Chairs: Dimitrios I Zeugolis, Centre for Research in Medical Devices (CÚRAM), National University of Ireland Galway (NUI Galway), Galway, Ireland
Manuela E Gomes, 3B's Research Group / University of Minho, Guimarães, Portugal*

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| 16:30 | 137.1 | Tenoinduction by mimicry of tendon topography
Ozan Akkus , Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH, United States |
| 17:00 | 137.2 | Fabrication of anisotropically aligned nanofibrous scaffolds based on natural/synthetic polymer blends reinforced with cellulose nanocrystals for tendon tissue engineering
Rui M A Domingues , 3B's Research Group, Guimarães, Portugal |
| 17:15 | 137.3 | Tenogenic phenotype maintenance and differentiation using macromolecular crowding and mechanical loading
Diana Gaspar , National University of Ireland Galway, Galway, Ireland |

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| 17:30 | 137.4 | Tendon reattachment using demineralised bone matrix and mesenchymal stem cells
Shirin Shahbazi , Biomedical Engineering, University College London, Middlesex, United Kingdom |
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| 17:45 | 137.5 | Enhanced biological activity of decellularized tendon slices by extracellular matrix from tendon-derived stem cells
Liang-Ju Ning , Institute of Stem Cell and Tissue Engineering, West China Hospital, Sichuan University, Chengdu, P.R. China |
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| 18:00 | 137.6 | Mimicking biophysical and biochemical cues of tendon tissue for ASCs
Wei Liu , Shanghai Tissue Engineering Key Laboratory, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, P.R. China |
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16:30 - 18:30

519

138 - New Frontiers Symposium

Biomaterials as stem cell microenvironments

*Chairs: Peter X Ma, Department of Biologic and Materials Sciences, University of Michigan, Ann Arbor, MI, United States
Vasif N Hasirci, Biological Sciences, Middle East Technical University, Ankara, Turkey*

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| 16:30 | 138.1 | Matrix mechanics and stem cell differentiation: pathways into the Nucleus
Dennis E Discher , University of Pennsylvania, Philadelphia, PA, United States |
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| 17:00 | 138.2 | Geometric manipulation of lung progenitor cells to control cell fate choice
John Soleas , Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada |
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| 17:15 | 138.3 | A point of care freeze-dried PEGylated-blood plasma based vasculogenic biomaterial for improved burn wound regeneration
Shanmugasundaram Natesan , Extremity Trauma Research and Regenerative Medicine, Burn Injury Research, US Army Institute of Surgical Research, San Antonio, TX, United States |
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| 17:45 | 138.4 | The microenvironment and cell behavior
Vasif N Hasirci , Biological Sciences, Middle East Technical University, Ankara, Turkey |
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| 17:30 | 138.5 | Integrin specificity as a novel strategy for enhancing transplanted stem cell survival and tissue repair in vivo
Amy Y Clark , Bioengineering, Georgia Institute of Technology, Atlanta, GA, United States |
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| 18:00 | 138.6 | Cell spreading in 3D hydrogels regulates YAP localization
Sebastián L Vega , Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, United States |
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| 18:15 | 138.7 | Enriching cancer stem cells in polyNIPAAm scaffolds
John M Heffernan , Barrow Brain Tumor Research Center, Barrow Neurological Institute, Phoenix, AZ, United States |
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16:30 - 18:30

520b

139 - General Session

Biomimetic materials

Chairs: Nesrin Hasirci, Chemistry Department, Middle East Technical University, Ankara, Turkey
Joëlle Amedee, University of Bordeaux, Inserm, Bordeaux, France

- 16:30 139.1 Chitosan sulfate: engineering a biomimetic growth factor delivery system
Brooke Farrugia, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia
- 16:45 139.2 A reductionist PEG-based system to elucidate the role of macrophages in vascular development
Erika M Moore, Duke University, Durham, NC, United States
- 17:00 139.3 Altering hydrogel crosslinking structure to control mechanics and regulate microvessel formation in vitro and in vivo
Ryan M Schweller, Biomedical Engineering, Duke University, Durham, NC, United States
- 17:15 139.4 Installing integrin-subtype specificity and multifunctionality on biomaterials: new perspectives in regenerative medicine
Carles Mas-Moruno, Biomaterials, Biomechanics and Tissue Engineering, Universitat Politècnica de Catalunya, Barcelona, Spain
- 17:30 139.5 Plasma sputter deposition of Magnesium containing coatings: a biomimetic strategy on 3D porous scaffolds for tissue engineering
Eloisa Sardella, National Research Council, Institute of Nanotechnology (CNR-NANOTEC), Bari, Italy
- 17:45 139.6 Biomimetic mechanical response of cartilage-like hydrogels
Giovanni S Offeddu, Department of Engineering, University of Cambridge, Cambridge, United Kingdom
- 18:00 139.7 Osteochondral tissue engineering based on biomimetic osteochondral scaffold contained calcified cartilage layer compounding with ADSCs in vitro and in vivo
Qiang Yang, Tianjin Hospital, Tianjin, P.R. China
- 18:15 139.8 Matrix metalloproteinase controlled degradation of an ECM analogue hydrogel based on a bespoke elastin-like recombinamer for tissue engineering
Doriana Orbanic, G.I.R. Bioforge, University of Valladolid, Valladolid, Spain

16:30 - 18:30

520c

140 - New Frontiers Symposium

Supramolecular biomaterials

Chairs: Matthew Webber, Koch Institute, MIT, Cambridge, MA, United States
Eric A Appel, Department of Materials Science & Engineering, Stanford University, Stanford, CA, United States
Patricia YW Dankers, Institute for Complex Molecular Systems, Eindhoven University of Technology, Eindhoven, Netherlands

- 16:30 140.1 Supramolecular hydrogels with double network formation for cell transplantation therapies
Sarah C Heilshorn, Materials Science & Engineering, Stanford University, Stanford, CA, United States
- 16:45 140.2 Biofunctionalized supramolecular hydrogels for stem cell expansion
Simone Hendrikse, Organic and Macromolecular chemistry, Eindhoven University of Technology, Eindhoven, Netherlands
- 17:00 140.3 Tuning stiffness of cell-laden hydrogel by reversible host-guest interactions
Chien-Chi Lin, Biomedical Engineering, Indiana University-Purdue University, Indianapolis, IN, United States
- 17:15 140.4 POSH inhibitor peptide amphiphile micelles as a novel leukemia therapeutic modality
Bret D Ulery, Chemical Engineering, University of Missouri, Columbia, MO, United States
- 17:30 140.5 Hierarchical self-assembled protein-inorganic supraparticles for inflammatory cytokine degradation
Julie A Champion, School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- 17:45 140.6 Alpha-helical peptide nanofibers as a self-adjuvanting vaccine platform
Yaoying Wu, Surgery, University of Chicago, Chicago, IL, United States
- 18:00 140.7 Super resolution imaging of supramolecular biomaterials: shining a light on biomaterials in vitro and in cells
Lorenzo Albertazzi, Nanoscopy for Nanomedicine Group, Institute for Bioengineering of Catalonia, Barcelona, Spain
- 18:15 140.8 Next-generation collagen hybridizing peptides: triggered unfolding and enhanced binding to denatured collagen
Julian L Kessler, University of Utah, Salt Lake City, UT, United States

16:30 - 18:00

524

141 - New Frontiers Symposium Biomaterials design via synthetic biology

Chairs: *Chao Zhong, ShanghaiTech University, Shanghai, P.R. China*
Neel S Joshi, School of Engineering and Applied Sciences, Harvard University, Boston, MA, United States
Lei Yang, Orthopaedic Institute, Soochow University, Suzhou, P.R. China

- 16:30 141.1 Synthetic biology-based interactive biohybrid materials
Wilfried Weber, Faculty of Biology, University of Freiburg, Freiburg, Germany
- 17:00 141.2 Squid sucker teeth proteins: from basic discovery to multi-functional materials of a thermoplastic biopolymer
Ali Miserez, School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore
- 17:15 141.3 Synthetic biology approaches for bioactive protein materials
Fei Sun, Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, Hong Kong, Hong Kong
- 17:30 141.4 Molecular biomimetics: linking structure, assembly, and function in biomolecular materials
Markus B Linder, Biotechnology, Aalto University, Espoo, Finland
- 17:45 141.5 Laminated composites of poly(ethylene glycol)-protein fibers exhibiting shape memory characteristic
Xing Zhang, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China

18:30 - 21:00

Departure from: Student Corner

Student Activities Night

• (ÉTS) École de technologie Supérieure (ÉTS)
Meet and Eat

• **McGill Mixer**

Ticket holders must gather at the Student Corner at 18:30.

Pre-registered participants must exchange the voucher for the actual ticket at the university booth of choice.

19:30 - 21:00

515

Affiliated Meeting

Chinese Society for Biomaterials (CSBM) Annual General Meeting - open to members

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DAY-AT-A-GLANCE

THURSDAY, MAY 19, 2016

07:30 - 17:30	Viger Hall - L200		Registration Desk	Registration open
09:00 - 18:00	220bcd		Exhibits	Exhibits open
07:00 - 08:30	525		Affiliated Meeting	JBMRB Editorial Board Meeting (by invitation only)
08:30 - 09:30	517bcd	200	Plenary	Plenary Session 2 - Jiang Chang
09:00 - 10:00	525		Affiliated Meeting	SFB Presidents Advisory Committee (by invitation only)
09:30 - 10:00	220bcd		Coffee Break	Coffee Break, Exhibits and Poster Viewing
10:00			Concurrent Sessions	
10:00 - 12:00	510a	201	New Frontiers Symposium	Reproductive tissue engineering
10:00 - 12:00	510b	202	New Frontiers Symposium	Emerging cell-instructive materials for regenerative niche
10:00 - 12:00	511e	203	General Session	Biomaterials in gene therapy
10:00 - 12:15	511f	204	General Session	Biomaterials in immune response
10:00 - 12:15	515	205	New Frontiers Symposium	Next-generation biomaterials for islet delivery and engraftment for diabetes
10:00 - 12:00	516a	206	General Session	Mechanical properties of biomaterials
10:00 - 12:00	516c	207	Science in Industry	Science in Industry 1
10:00 - 12:00	517a	208	New Frontiers Symposium	Glycosaminoglycan-based cell-instructive materials
10:00 - 12:15	518	209	New Frontiers Symposium	Biomaterials for pluripotent stem cell culture and differentiation
10:00 - 12:00	519	210	New Frontiers Symposium	Biomaterials as stem cell microenvironments
10:00 - 12:30	520b	211	New Frontiers Symposium	Biomaterials for bio-3D printing
10:00 - 12:15	520c	212	New Frontiers Symposium	Smart biomaterials from complex structures of natural macromolecules
10:00 - 12:30	524	213	New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
12:00 - 14:00			Lunch Break	12:00-14:00 - Lunch, Exhibits, Poster Viewing
12:00 - 14:00	513def		Affiliated Meeting	Australasian Society of Biomaterials & Tissue Engineering - Annual General Meeting - open to members
12:00 - 14:00	514a		Affiliated Meeting	SFB Spring Board and Council Meeting (by invitation only)
12:00 - 14:00	525		Affiliated Meeting	Chinese Biomaterials Society - Regenerative Biomaterials Editorial Board Mtg (by invitation only)
12:15 - 14:00	524		Affiliated Meeting	Canadian Biomaterials Society (CBS) Annual General Meeting - open to members
12:30 - 13:45	517a	214	Technical Forum	CAM Bioceramics - Preclinical studies of next generation Calcium phosphate based products for faster bone regeneration
14:00 - 15:00			Concurrent Sessions	
14:00 - 15:00	510b	216	General Session	Bioactive glasses
14:00 - 15:00	511e	217	General Session	Biomaterials for therapeutic delivery
14:00 - 15:00	511f	218	General Session	Biomaterials in immune response
14:00 - 15:00	515	219	New Frontiers Symposium	Standardization in evaluations of biodegradable metals
14:00 - 15:00	516a	220	General Session	Biomaterials for mechanical interfaces
14:00 - 15:00	516c	221	Science in Industry	Science in Industry 2
14:00 - 15:00	517a	222	General Session	Biomaterials for control of tissue induction
14:00 - 15:00	518	223	New Frontiers Symposium	Biomaterials for pluripotent stem cell culture and differentiation
14:00 - 15:00	519	224	New Frontiers Symposium	Biomaterials as stem cell microenvironments
14:00 - 15:00	520b	225	New Frontiers Symposium	Biomaterials for bio-3D printing
14:00 - 15:00	520c	226	New Frontiers Symposium	Smart biomaterials from complex structures of natural macromolecules
14:00 - 15:00	524	227	New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
14:30 - 15:30	513def		Affiliated Meeting	Society for Biohydrogels (open to members and non-members)
14:30 - 16:00	525		Affiliated Meeting	The Society for Biomaterials and Artificial Organs (India) - open to members
15:00 - 16:30	220Bcd		Poster Networking	Poster Session 1B and Refreshments
15:30 - 17:00	446		Affiliated Meeting	SFB and CSBM (China) Bilateral Mtg (by invitation only)
15:30 - 16:30	513def		Affiliated Meeting	Intl. College of Fellows Biomaterials Science & Engineering Fellows Session (by invitation only)
16:30			Concurrent Sessions	
16:30 - 18:30	510a	229	General Session	Naturally-derived materials and biopolymers
16:30 - 18:15	510b	230	New Frontiers Symposium	Intracellularly acting nano-structured biomaterials
16:30 - 18:30	511e	231	Round Table Panel Discussion	Clinical entry of biomaterials and biomaterials related technologies
16:30 - 18:30	511f	232	New Frontiers Symposium	Multifunctional biomolecular interfaces for orthopaedic applications
16:30 - 18:30	515	233	New Frontiers Symposium	Standardization in evaluations of biodegradable metals
16:30 - 18:30	516a	234	General Session	ACTA Biomaterialia Gold Award Session on biomimetic implant surfaces
16:30 - 18:30	516c	235	Science in Industry	Science in Industry 3
16:30 - 18:30	517a	236	Special Session	Society for Biomaterials (SFB) US Awards
16:30 - 18:30	518	237	General Session	Biomaterials for therapeutic delivery
16:30 - 18:30	519	238	New Frontiers Symposium	Nanobiomechanics of living tissue and cells
16:30 - 18:30	520b	239	New Frontiers Symposium	Biomaterials for bio-3D printing
16:30 - 18:30	520c	240	New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
16:30 - 18:15	524	241	New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
17:00			Tutorials	
17:00 - 17:45	513a	242	Tutorial	Angiodynamics - Engineering surface blood compatibility into catheter products: Endexo technology into BioFlo catheters
17:00 - 17:45	513b	243	Tutorial	Anton Paar GmbH - The importance of the surface charge in biomaterials applications
17:00 - 17:45	513c	244	Tutorial	Evonik - Resorbable biomaterials: Their evolving properties and advanced applications



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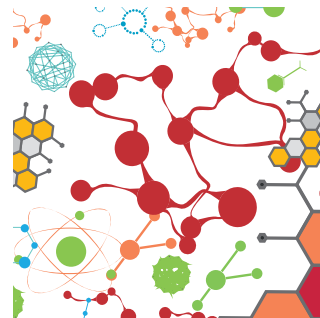
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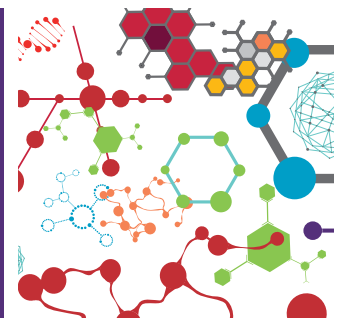
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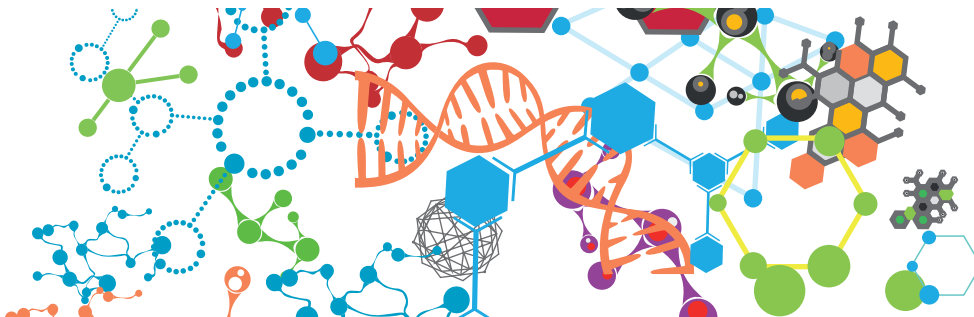
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Specialty sections



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DETAILED PROGRAM

THURSDAY, MAY 19, 2016

07:30 - 17:30 Viger Hall - 200 level

Registration open

09:00 - 18:00 220bcd

Exhibits Open

07:00 - 08:30 525

Affiliated Meeting JBMRB Editorial Board Meeting (by invitation only)

08:30 - 09:30 517bcd

200 - Plenary Plenary Session 2

Chairs: *Serena M Best, University of Cambridge, Cambridge, United Kingdom*
Keith McLean, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia

- 200.1 Tissue regeneration: the effect of biomaterials chemistry and microstructure
Jiang Chang, Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Shanghai, China

09:00 - 10:00 525

Affiliated Meeting SFB Presidents Advisory Committee (by invitation only)

09:30 - 10:00 220bcd

Coffee Break, Exhibits and Poster Viewing

10:00 - 12:00 510a

201 - New Frontiers Symposium Reproductive tissue engineering

Chairs: *Christiani Andrade Amorim, Gynecology, Université Catholique de Louvain, Brussels, Belgium*
Ariella Shikanov, Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

- 10:00 201.1 Encapsulated three-dimensional (3-D) culture of ovarian follicles for female fertility preservation: a decade of experience and future directions
Mary B Zelinski, Division of Reproductive & Developmental Sciences, Oregon National Primate Research Center, Beaverton, OR, United States
- 10:30 201.2 Restoration of ovarian endocrine function using immunoisolation device
Ariella Shikanov, Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States
- 10:45 201.3 A holistic tissue engineering approach from laboratory to small and large animal models for treatment of pelvic organ dysfunction
Jerome A Werkmeister, CSIRO Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton South Victoria, Australia
- 11:00 201.4 Design of biomaterial grafts to support transplantation of isolated primordial follicles that produce live births in a mouse infertility model
Ekaterina Kniazeva, Obstetrics and Gynecology, Northwestern University, Chicago, IL, United States
- 11:15 201.5 The effect of ECM stiffness on ovarian follicle development
Michael J Buckenmeyer, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- 11:30 201.6 Bioengineered uterine tissue to support pregnancy in a rat model
Mats Hellström, Department of Obstetrics and Gynecology, Sahlgrenska Academy, University of Gothenburg, Sweden, Göteborg, Sweden
- 11:45 201.7 Development of a transplantable artificial ovary: influence of follicle stage on transplantation outcome
Maria Costanza Chiti, Gynecology laboratory, Université Catholique de Louvain, Bruxelles, Belgium

10:00 - 12:00

510b

202 - New Frontiers Symposium

Emerging cell-instructive materials for regenerative niche

Chairs: Arghya Paul, Department of Chemical and Petroleum Engineering, Bioengineering Program, University of Kansas, Lawrence, KS, United States

Michael Detamore, Chemical & Petroleum Engineering, University of Kansas, Lawrence, KS, United States

Changsheng Liu, Engineering Research Center of Biomedical Materials under Ministry of Education, East China University of Science and Technology, Shanghai, P.R. China

10:00 202.1 Hydrogels to deliver, recruit, and control stem cell behavior in vivo
Jason A Burdick, Bioengineering, University of Pennsylvania, Philadelphia, PA, United States

10:30 202.2 Controlled sub-nanometer epitope spacing in a three dimensional self-assembled peptide hydrogels
Eugene T Pashuck, Department of Materials, Imperial College London, London, United Kingdom

10:45 202.3 PNIPAAm-based biohybrid injectable hydrogel for cardiac tissue engineering
Mehdi Nikkha, Bioengineering, School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, United States

11:00 202.4 Bioengineered epicardial patch regenerates the adult mammalian heart
Vahid Serpooshan, School of Medicine, Cardiovascular Institute, Stanford University, Stanford, CA, United States

11:15 202.5 Investigating the role of hypoxia-inducible factor-1 activation in the vascularization of modular tissue engineered constructs
Gabrielle C Lam, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

11:30 202.6 Local delivery of stem cell growth factors with injectable hydrogels for myocardial therapy
Rena Waters, Bioengineering, University of Kansas, Lenexa, KS, United States

11:45 202.7 Hydrogels with biomimetic structural cues regulate regenerative microenvironment
Shlipa Sant, Pharmaceutical Science and Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

10:00 - 12:00

511e

203 - General Session

Biomaterials in gene therapy

Chairs: Jordan J Green, Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States
Dong Yun Lee, Bioengineering, Hanyang University, Seoul, Korea

10:00 203.1 Effective and cancer-specific siRNA delivery to human hepatocellular carcinoma cells mediated by poly(beta-amino ester) nanoparticles
Camila G Zamboni, Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD, United States

10:15 203.2 Directed ELR based devices for breast cancer therapy
Alessandra Girotti, Centro de Investigación Biomédica en Red Bioingeniería, Biomateriales y Nanomedicina, University of Valladolid, Valladolid, Spain

10:30 203.3 Pullulan-PEI-Histidine towards gene delivery: vector unpacking with respect to molecular weight and cytoplasmic histones
Rekha M Ramesan, Biosurface Technology Division, BMT Wing, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, India

10:45 203.4 Thermo-sensitive hydrogel delivery system for sustained and controlled intracellular delivery of biologically active nanoparticles
Marine J Chalanqui, Experimental therapeutics, Queen's University, School of Pharmacy, Belfast, United Kingdom

11:00 203.5 Pullulan based multifunctional thiolated polymers for efficient gene delivery and efflux pump inhibition with enhanced doxorubicin retention in C6 glioma cell
Priya Sahadevan Syamala, Division of Biosurface Technology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India

11:15 203.6 Transfection efficiency of PEI polyplexes: a matter of complexation protocol, size and sedimentation
Daniele Pezzoli, Department of Mining, Metallurgical and Materials Engineering and Research Center of St-François d'Assise Hospital, Université Laval, Québec, QC, Canada

11:30 203.7 Lipid nanoparticle formulation optimization for in vivo mRNA delivery with design of experiment methodologies
Kevin J Kauffman, Massachusetts Institute of Technology, Cambridge, MA, United States

11:45 203.8 Polymeric nanoparticle systems for non-viral gene delivery
Jordan J Green, Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States

10:00 - 12:15

511f

204 - General Session

Biomaterials in immune response

Chairs: Yu-Chieh Chiu, Fischell Department of Bioengineering, University of Maryland, College Park, MD, United States
Julie A Stenken, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR, United States

- 10:00 204.1 Polymer degradation alters intrinsic immunogenicity of rapidly degradable polymers
James I Andorko, Bioengineering, University of Maryland, College Park, MD, United States
- 10:15 204.2 Methotrexate mitigates UHMWPE-induced inflammatory osteolysis in murine calvaria model, more than anti-TNF or anti-IL-1R treatments: implications for extending implant lifetimes
Nadim J Hallab, Dept Orthopedic Surgery, Dept of Immunology, Rush University, Chicago, IL, United States
- 10:30 204.3 Evaluation of the immunomodulatory potential of chitosan-grafted-poly(e-caprolactone) copolymers and their use for bone tissue regeneration
Maria Chatzinikolaïdou, Materials Science and Technology, University of Crete, Heraklio, Greece
- 10:45 204.4 Innate inflammatory cytokine response in periprosthetic tissue of failed metal-on-metal is significantly greater than failed metal-on-polyethylene THA implants
Lauryn Samelko, Immunology and Orthopedic Surgery, Rush University Medical Center, Chicago, IL, United States
- 11:00 204.5 Damage-associated molecular patterns in the adsorbed protein layer on biomaterial surfaces
Laura A Mckiel, Chemical Engineering, Queen's University, Carleton Place, ON, Canada
- 11:15 204.6 A nanofibrous macroencapsulation device for cell-based therapy: evaluation of biocompatibility and the immunoisolation function
Ying Luo, Biomedical Engineering, Peking University, Beijing, P.R. China
- 11:30 204.7 Modulating the macrophage response to poly(lactic-co-glycolic acid) with the immunomodulatory protein CD200
Wendy Liu, Biomedical Engineering, University of California Irvine, Irvine, CA, United States
- 11:45 204.8 Methacrylic acid-containing beads modulate macrophage polarization in a vascularizing subcutaneous mouse model
David Kongyu Zhang, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 12:00 204.9 Do cobalt and chromium ions affect the formation of an extracellular matrix?
Hayley Floyd, PSIBS Doctoral Centre, University of Birmingham, Birmingham, United Kingdom

10:00 - 12:15

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205 - New Frontiers Symposium

Next-generation biomaterials for islet delivery and engraftment for diabetes

Chairs: Andres J Garcia, Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
Cherie Stabler, Biomedical Engineering, University of Florida, Gainesville, FL, United States
Paul P De Vos, Medical, University Medical Center Groningen, Groningen, Netherlands

- 10:00 205.1 Transplantable bioartificial pancreas devices: current status and future prospects
Barbara Ludwig, Department of Medicine III, University Hospital Carl Gustav Carus, Technical University of Dresden, Dresden, Germany
- 10:30 205.2 Vasculogenic degradable hydrogel to enhance islet engraftment and function within an alternative transplant site
Jessica D Weaver, Mechanical Engineering and Bioengineering, Georgia Institute of Technology, Atlanta, GA, United States
- 10:45 205.3 Robust, nanofiber-enabled hydrogel devices for islet encapsulation and delivery
Duo An, Cornell University, Ithaca, NY, United States
- 11:00 205.4 Extrahepatic islet transplantation with a citrate-based thermoresponsive hydrogel
Ameer Guillermo, Biomedical Engineering Department, Department of Surgery, Northwestern University, Evanston, United States
- 11:15 205.5 Immune modulatory biomaterials for cell-based therapies
Omid Veiseh, David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States
- 11:30 205.6 CXCL12-delivery by double microcapsules and dual costimulatory blockade synergistically prolong the survival of porcine islet xenografts in diabetic NOD mice
Susan A Safley, Department of Surgery, Emory University, Atlanta, GA, United States
- 11:45 205.7 A novel biologic resorbable scaffold for tissue engineering of an intra-abdominal endocrine pancreas
Camillo Ricordi, Diabetes Research Institute, University of Miami, Miami, FL, United States
- 12:00 205.8 Islet-embedded endothelialized modules restore normoglycemia in diabetic SCID/Bg mice
Alexander E Vlahos, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

10:00 - 12:00

516a

206 - General Session

Mechanical properties of biomaterials

Chairs: Anne Bernhardt, Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Dresden, Germany
 Nicholas Dunne, Mechanical & Aerospace Engineering, Queen's University Belfast, Belfast, United Kingdom

- 10:00 206.1 dynamic and static tensile mechanical properties of myocardial tissue
Sherif T Ramadan, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 10:15 206.2 Stress analysis of the circumferential and burst strength tests in small diameter vascular grafts of segmented polyurethanes based on amino acids of L-arginine and L-lysine
Ena D Bolaina-Lorenzo, Unidad de Materiales, Centro de Investigación Científica de Yucatán, Yucatán, Mexico
- 10:30 206.3 Development of a flow evolution network model for predicting the viscoplastic behavior of poly(L-lactide)
Danika Hayman, Veryst Engineering, Needham, MA, United States
- 10:45 206.4 The effect of glycation and cyclic loading on the material properties of isolated arterial elastin
LD Timmie Topoleski, Mechanical Engineering, University of Maryland, Baltimore County (UMBC), Baltimore, MD, United States
- 11:00 206.5 Long-term viscoelasticity monitoring of enzymatic degradation of chitosan scaffolds
Eve Hui, Laboratoire de Biomateriaux Endovasculaires, CRCHUM, Montréal, QC, Canada
- 11:15 206.6 A novel method for the study of fatigue in bone
Carolyn Skurla, Mechanical Engineering, Baylor University, Waco, TX, United States
- 11:30 206.7 Study of a synthetic elastomer with tunable mechanical properties
Anastasia Korolj, University of Toronto, Toronto, ON, Canada
- 11:45 206.8 Effect of in situ reactions on the mechanical properties of biodegradable Mg-matrix composite
Nguyen Quang Cao, Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan

10:00 - 12:00

516c

207 - Science in Industry 1

Cardiovascular and orthopaedic sessions

Organizers: Isabelle Catelas, University of Ottawa, Ottawa, ON, Canada
 Xiang Zhang, Lucideon, Cambridge, United Kingdom

10:00 CARDIOVASCULAR SESSION

Chairs: Jochen Salber, Universitaetklinikum Knappschafts Krankenhaus Bochum, Germany
 Mark Breyen, Medtronic, Minneapolis-St. Paul, MN, United States
 Kibret Mequanint, Western University, London, ON, Canada

- 207.1 **Mirosława El Fray**, POLTISS, Szczecin, Poland N/A
- 207.2 **Mark Boden**, Boston Scientific, Boston, MA, United States N/A
- 207.3 **Jeannette Ho**, Interface Biologics, Inc., Toronto, ON, Canada N/A

11:00 ORTHOPAEDIC SESSION

Chairs: Martijn Van Griensven, Technical University Munich, Germany
 Stuart Goodman, Stanford University, Stanford, CA, United States
 Isabelle Catelas, Associate Professor and Canada Research Chair, University of Ottawa, Ottawa, ON, Canada

- 207.4 **Joost D de Bruijn**, Queen Mary University of London and Progentix Orthobiology, London, UK N/A
- 207.5 **Jim Nevelos**, Stryker Orthopaedics, New York, NY, United States N/A
- 207.6 **Sean AF Peel**, Induce Biologics Inc., Toronto, ON, Canada N/A

10:00 - 12:00

517a

208 - New Frontiers Symposium Glycosaminoglycan-based cell-instructive materials

Chairs: Uwe Freudenberg, Institute Biofunctional Polymer Materials / Max Bergmann Center of Biomaterials Dresden, Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany
Monica Serban, Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT, United States

- 10:00 208.1 Heparin-based microparticles for temporally controlled protein Sequestration to Modulate Chondrocytic Differentiation
Torri E Rinker, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- 10:15 208.2 Heparin microparticles loaded with bone morphogenetic protein-2 (BMP-2) induce bone regeneration in a critically sized rat femoral defect model
Marian H Hettiaratchi, Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States
- 10:30 208.3 Induced differentiation of mesenchymal precursor cells in hyaluronan hydrogel with covalently linked bisphosphonates
Dmitri Ossipov, Chemistry-Ångström Laboratory, Uppsala University, Uppsala, Sweden
- 10:45 208.4 Artificial extracellular matrix - a promising approach to enhance new bone formation in critical size bone defects
Stefan Rammelt, University Center of Orthopaedics and Traumatology, University Hospital Carl Gustav Carus, Dresden, Germany
- 11:00 208.5 StarPEG-heparin hydrogels as chemokine scavenger to improve aberrant wound healing processes
Sandra Franz, Department of Dermatology, Venerology and Allergology, University Leipzig, Leipzig, Germany
- 11:15 208.6 3D drug screening: bifunctional hyaluronan matrix for breast cancer drug screening
Alexander EG Baker, Chemical Engineering and Applied Sciences, University of Toronto, Toronto, ON, Canada
- 11:30 208.7 Multifunctional peptides synergistically improve cell adhesion on titanium
Annette G Beck-Sickinger, Institute of Biochemistry, University of Leipzig, Leipzig, Germany
- 11:45 208.8 A versatile and biocompatible chondroitin sulfate-based cross-linker to restore corneal mechanics and collagen alignment
Xiaokun Wang, The Johns Hopkins University, Baltimore, MD, United States

10:00 - 12:15

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209 - New Frontiers Symposium Biomaterials for pluripotent stem cell culture and differentiation

Chairs: Tetsuji Yamaoka, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute (NCVC), Suita, Japan
Binata Joddar, Biomedical Engineering, University of Texas at El Paso, El Paso, TX, United States

- 10:00 209.1 Human pluripotent stem cell culture on hydrogels grafted with nanosegments for feeder-free and xeno-free culture
Akon Higuchi, Chemical and Materials Engineering, National Central University & King Saud University, Saudi Arabia, Saitama, Japan
- 10:30 209.2 Regulation of arterial venous differentiation through immobilized and soluble developmental signals
Taylor B Dorsey, Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States
- 10:45 209.3 A multifactorial approach towards mesenchymal stem cell phenotype maintenance and enhanced matrix deposition for in vitro organogenesis - macromolecular crowding meets oxygen tension
Dimitrios I Zeugolis, Centre for Research in Medical Devices (CÚRAM), National University of Ireland Galway (NUI Galway), Galway, Ireland
- 11:00 209.4 Effective bioengineered niche for cardiac differentiation and/or beating induction of iPSC and P19CL6 cells
Tetsuji Yamaoka, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute (NCVC), Suita, Japan
- 11:15 209.5 Nanostructures based on derived inverse opal films promote the osteogenesis of mesenchymal stem cells
Qian-Ru Xiao, State Key Laboratory of Bioelectronics, Southeast University, Nanjing, P.R. China
- 11:30 209.6 Determining a hydrogel scaffold milieu for stem cell differentiation into endothelial lineage
Kendra N Clark, Biomedical Materials Science, University of Mississippi Medical Center, Jackson, MS, United States
- 11:45 209.7 Exploring the ability of bio-derived substrates to increase stem cell expansion for regenerative medicine
Binata Joddar, Biomedical Engineering, University of Texas at El Paso, El Paso, TX, United States
- 12:00 209.8 Micro-patterned surfaces with peptides as extra-cellular matrix mimics
Ibrahim Bilem, Laval University, Québec, QC, Canada

10:00 - 12:00

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210 - New Frontiers Symposium Biomaterials as stem cell microenvironments

Chairs: **Jingan Li**, Key Laboratory for Advanced Technologies of Materials, Ministry of Education, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
Jiro Nagatomi, Bioengineering, Clemson University, Clemson, SC, United States

- 10:00 210.1 Oriented differentiation of MSCs to VECs by FMC assay on the micro-patterned TiO₂ nanotubes
Jingan Li, Key Laboratory for Advanced Technologies of Materials, Ministry of Education, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- 10:15 210.2 Effect of fibronectin-gelatin coating on 3D assembly of urothelial tissue constructs in vitro
Jiro Nagatomi, Bioengineering, Clemson University, Clemson, SC, United States
- 10:30 210.3 Modeling the effect of platelet releasate on the migratory behavior of perivascular cells
Niloufar Khosravi, Faculty of Dentistry/ Institute for Biomaterial and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 10:45 210.4 Spheroid model for functional osteogenic evaluation of human adipose derived stem cells
Bhuvanawari Gurumurthy, Biomedical Materials Science, University of Mississippi Medical Center, Jackson, MS, United States
- 11:00 210.5 Newly developed bioactive borosilicate glasses: impact of boron on particles sintering and hASCs response
Jonathan Massera, Biomaterials and Tissue Engineering, ELT, Tampere University of Technology, Tampere, Finland
- 11:15 210.6 Designing dense connective tissues: identifying microenvironmental factors that direct human MSC differentiation in 3D
Jenna F Usprech, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 11:30 210.7 The effects of matrix stiffness on mesenchymal stem cell chondrogenesis in 3D is dependent on crosslinking mechanisms and biochemical cues
Tianyi Wang, Department of Bioengineering, Stanford University, Stanford, CA, United States
- 11:45 210.8 Engineering plasma-polymerised surfaces for synergistic integrin/growth factor signalling to promote mesenchymal stem cell adhesion and differentiation
Zhe Annie Cheng, Biomedical Engineering, University of Glasgow, Glasgow, United Kingdom

10:00 - 12:30

520b

211 - New Frontiers Symposium Biomaterials for bio-3D printing

Chairs: **Wei Sun**, Mechanical Engineering, Tsinghua University, Beijing, P.R. China
Guohao Dai, Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States

- 10:00 211.1 Nano- and microfabricated hydrogels for regenerative engineering
Ali Khademhosseini, Harvard/ Massachusetts Institute of Technology, Cambridge, MA, United States
- 10:30 211.2 3D bioprinting of human pluripotent stem cells and smart biomaterials for tissue engineering
Will Wenmiao Shu, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, United Kingdom
- 10:45 211.3 PEG cross-linking bioink method for 3D printing hydrogels of diverse cross-linking chemistries
Alexandra L Rutz, Northwestern University, Chicago, IL, United States
- 11:00 211.4 Engineered tissues with perfusable vascular networks created by sacrificial templating of laser sintered carbohydrates
Ian S Kinstlinger, Department of Bioengineering, Rice University, Houston, TX, United States
- 11:15 211.5 Emulsion inks for 3D printing porous materials
Nicholas A Sears, Biomedical Engineering, Texas A&M University, College Station, TX, United States
- 11:30 211.6 Anti-infective efficacy of a 3D printed PLGA/HA scaffold grafted with quaternised chitosan
Tingting Tang, Department of Orthopaedic Surgery, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, P.R. China
- 11:45 211.7 Recombinant spider silk proteins as example for supramolecular Printable Hydrogels
Jurgen Groll, Department of Functional Materials in Medicine and Dentistry, University Hospital Würzburg, Würzburg, Germany
- 12:00 211.8 Hydrogel composition effects on microchannel formation using a direct-deposition hydrogel molding process for microfluidic devices fabrication
Karen C Yan, Mechanical Engineering, The College of New Jersey, Ewing, NJ, United States
- 12:15 211.9 Bioprinting of 3D pre-vascularized stem cell delivery platform for the treatment of ischemic cardiac diseases
Jinah Jang, Department of Mechanical Engineering, Pohang University of Science and Technology, Pohang, Korea

10:00 - 12:15

520c

212 - New Frontiers Symposium Smart biomaterials from complex structures of natural macromolecules

Chairs: **Marisa M Beppu**, School of Chemical Engineering, University of Campinas, Campinas, Brazil
Fernando Jorge Monteiro, Instituto Nacional de Engenharia Biomédica, Porto, Portugal

- 10:00 212.1 Cellular backpacks for biomedical applications
Michael F Rubner, Materials Science and Engineering, MIT, Cambridge, MA, United States
- 10:30 212.2 Immobilization of biomolecules in nanostructured films for electronic tongues and nanobiosensors
Oswaldo N Oliveira Jr, Instituto de Física de São Carlos, Universidade de São Paulo, São Carlos, Brazil
- 10:45 212.3 Electrospun nanofibrous silk membranes embedding gelatin nanospheres for controlled drug delivery
Jiankang Song, Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands
- 11:00 212.4 Supramolecular hyaluronic acid-based hydrogels with dynamic viscoelasticity
Adrienne M Rosales, Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO, United States
- 11:15 212.5 Carbohydrate-based block copolymer self-assemblies: sub_10nm highly nanostructured thin films
Redouane Borsali, Physico-chemistry and Self-assembly of Glycopolymers, CERMAV - CNRS & Grenoble Alpes University, Grenoble, France
- 11:30 212.6 The stability of ZnO particles in bacterial cellulose and its potential application as wound dressing
Hai Lin, National Engineering Research Center for Biomaterials, Sichuan University, Sichuan, P.R. China
- 11:45 212.7 Injectable hydrogel consisting of bisphosphonate-functionalized hyaluronan and doxorubicin@magnesium silicate nanoparticles for anti-cancer therapy
Liyang Shi, Department of Chemistry-Ångström, Uppsala University, Uppsala, Sweden
- 12:00 212.8 Surface modified multi-functional PCL/TCP fibrous scaffolds
Elbay Malikmammadov, Micro and Nanotechnology, Middle East Technical University, Ankara, Turkey

10:00 - 12:30

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213 - New Frontiers Symposium Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By:  ACS Biomaterials
SCIENCE & ENGINEERING

Chairs: **Nuno M Neves**, 3B's Research Group, University of Minho, Barco GMR, Portugal
Eun Ji Chung, University of Chicago, Chicago, IL, United States

- 10:00 213.1 Smart contact lens and smart eye glasses
Sei Kwang Hahn, Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea
- 10:15 213.2 Redox injectable gel for anti-adhesion agent
Yukio Nagasaki, Materials Science and Medical Sciences, University of Tsukuba, Tsukuba, Japan
- 10:30 213.3 Influence of molecular architecture in the design and development of a pH-responsive nanoscale hydrogel platform for tumor-targeted drug delivery
Angela M Wagner, Biomedical Engineering, The University of Texas at Austin, Austin, TX, United States
- 10:45 213.4 Biomimetic self-assembled nano-composite hydrogel promotes myoblast differentiation
Akhil Patel, Department of Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, PA, United States
- 11:00 213.5 A comparison study on optical and biological properties of dispersed versus agglomerated nanocomposites
Cheyann L Wetteland, Bioengineering, University of California, Riverside, CA, United States
- 11:15 213.6 Controlling and characterizing protein G B1 orientation on functionalized gold nanoparticles
David Castner, University of Washington, Seattle, WA, United States
- 11:30 213.7 Electrically conducting polymers in next generation neuroelectrode design
Ghazal Tadayyon, CURAM, National University of Ireland, Galway, Ireland
- 11:45 213.8 Biocompatible calcium and phosphorous-doped titania nanotubes influences the osteogenic differentiation of human mesenchymal stem cells
Sofia A Alves, University of Minho, Braga, Portugal
- 12:00 213.9 Synthesis and characteristics of core-shell and multishell structured nanoparticles for anticancer applications
Qingwen Guan, Mechanical Engineering, The University of Hong Kong, Hong Kong
- 12:15 213.10 Effect of silica nanoparticles on endothelial permeability and inflammation in human brain microvessel endothelial cells
Xin Liu, Shanghai Biomaterials Research and Testing Center, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, P.R. China

DETAILED PROGRAM

THURSDAY, MAY 19, 2016

12:00 - 14:00

Lunch, Exhibits, Poster Viewing

12:00 - 14:00

513def

Affiliated Meeting

Australasian Society of Biomaterials and Tissue Engineering (ASBTE) Annual General Meeting - open to members

12:00 - 14:00

514a

Affiliated Meeting

SFB Spring Board and Council Meeting (by invitation only)

12:00 - 14:00

525

Affiliated Meeting

Chinese Biomaterials Society - Regenerative Biomaterials Editorial Board Meeting (by invitation only)

12:15 - 14:00

524

Affiliated Meeting

Canadian Biomaterials Society (CBS) Annual General Meeting - open to members

12:30 - 13:45

517a

214 - Technical Forum

Preclinical studies of next generation Calcium phosphate based products for faster bone regeneration

Sponsored By:  cambioceramics

- 214.1 Bone regeneration using calcium phosphate cement: to aid is to degrade! N/A
Jeroen Jjp Van Den Beucken, Radboudumc, Nijmegen, Netherlands
- 214.2 In vitro and in vivo evidence for local antibiotic drug delivery and bone void filling achieved by a nano crystalline HA paste
Jacobus JC Arts, Orthopaedic Surgery, Maastricht University Medical Centre, Maastricht, Netherlands N/A

14:00 - 15:00

510b

216 - General Session

Bioactive glasses

Chairs: **Mark Filiaggi**, Applied Oral Sciences, Dentistry, Dalhousie University, Halifax, NS, Canada
Julian R Jones, Department of Materials, Imperial College London, London, United Kingdom

- 14:00 216.1 Development of mesoporous bioactive glasses able to release antibacterial Ga³⁺ ions
Antonio J Salinas, Inorganic and Bioinorganic Chemistry, Complutense University, Madrid, Spain
- 14:15 216.2 Complex species represent a potential mechanism to expand the clinical use of glass ionomer cements
Brett Dickey, School of Biomedical Engineering, Dalhousie University, Halifax, NS, Canada
- 14:30 216.3 Effect of crystallization on dissolution and biocompatibility of bioactive scaffolds
Louis-Philippe Lefebvre, Medical Device, National Research Council Canada, Boucherville, QC, Canada
- 14:45 216.4 In vitro biological properties of 45S5 bioglass fabricated by spark plasma sintering (SPS)
Zhong Li, School of Mechanical & Aerospace Engineering, Nanyang Technological University, Singapore, Singapore

14:00 - 15:00

511e

217 - General Session

Biomaterials for therapeutic delivery

Chairs: *Kwideok Park, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea*
Ryan K Roeder, Bioengineering Graduate Program, University of Notre Dame, Notre Dame, IN, United States

- 14:00 217.1 Copper-doped bioactive mesoporous glasses as multifunctional agent for bone regeneration
Sonia L Fiorilli, Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy
- 14:15 217.2 Transplantation of mesenchymal stem cell spheroids with microwell-patterned scaffolds for treating hindlimb ischemia
Jinyang Wang, Peking University, Beijing, P.R. China
- 14:30 217.3 Early stage differentiation response of pre-osteoblastic MC3T3-E1 cells to therapeutically-loaded calcium polyphosphate bead degradation extracts
Patricia A Comeau, Systems Design Engineering, University of Waterloo, Kitchener, ON, Canada
- 14:45 217.4 Delivery of self-assembling osteogenic nanoparticles via a thermo-responsive nanofibre reinforced hydrogel
Philip Chambers, School of Mechanical and Aerospace Engineering, Queen's University, Belfast, United Kingdom

14:00 - 15:00

511f

218 - General Session

Biomaterials in immune response

Chairs: *Helmut Schweikl, Operative Dentistry and Periodontology, University Hospital, University of Regensburg, Regensburg, Germany*
Kaitlin M. Bratlie, Materials Science & Engineering, Iowa State University, Ames, IA, United States

- 14:00 218.1 Polyanhydride nanovaccine platform provides protective immunity against Streptococcus pneumoniae
Danielle A Wagner-Muñiz, Veterinary Microbiology and Preventative Medicine, Iowa State University, Ames, IA, United States
- 14:15 218.2 Combination nanovaccine enhances influenza vaccine efficacy in aged animals
Kathleen A Ross, Chemical & Biological Engineering, Iowa State University, Ames, IA, United States
- 14:30 218.3 An endosome-escaping microparticle facilitates delivery of RIG-I vaccine adjuvants
Randall N Toy, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- 14:45 218.4 Exogenous delivery of indoleamine 2,3 dioxygenase for the induction of antigen specific immune tolerance
Evelyn R Bracho-Sanchez, Biomedical Engineering, University of Florida, Gainesville, FL, United States

14:00 - 15:00

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219 - New Frontiers Symposium

Standardization in evaluations of biodegradable metals

Chairs: *Frank Witte, Julius Wolff Institute and Berlin-brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany*
Yufeng Zheng, Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing, P.R. China

- 14:00 219.1 The function and development of standards for a newly commercialized technology – absorbable metallic implants
Byron K Hayes, Medical Products Division, W.L. Gore & Associates, Inc., Flagstaff, AZ, United States
- 14:30 219.2 Challenges for the determination of degradation products of biodegradable metals and alloys
Carla Vogt, Analytical Chemistry, Leibniz University Hannover, Institute for Inorganic Chemistry, Hannover, Germany
- 14:45 219.3 A systematic comparison of biodegradation behavior of absorbable metal: in standardized immersion, arterial bioreactor and in vivo study
Juan Wang, Department of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China

14:00 - 15:00

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220 - General Session

Biomaterials for mechanical interfaces

Chairs: *John B Medley, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, Canada*
William Naville, Material Engineering, University Center FEI, São Paulo, Brazil

- 14:00 220.1 Thiol-ene cross-linking and functionalisation of Polydimethylsiloxane for biomedical applications
Khai Duong Quang Nguyen, School of Materials Science and Engineering, Queen Mary, University of London, London, United Kingdom
- 14:15 220.2 Tuning nerve cell functions on polymer networks with distinction in hydrophilicity and stiffness
Shanfeng Wang, Department of Materials Science and Engineering, and Institute of Biomedical Engineering, The University of Tennessee, Knoxville, TN, United States
- 14:30 220.3 The interplay between collagen content and organisation in enhancing the strength of tissue-engineered ligaments
Richard L Williams, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- 14:45 220.4 Extending the application of plasma electrolytic oxide coatings to novel low-rigidity beta-type titanium alloys: applications to load-bearing orthopaedic implants
Mehdi Golozar, Faculty of Engineering Science, University of Leuven (Belgium) and University of Cambridge (UK), Leuven, Belgium

14:00 - 15:00

516c

221 - Science in Industry 2 Controlled release

Chairs: Xiang Zhang, Lucideon, Cambridge, United Kingdom
Elaine Duncan, Paladin Medical, Inc., Minneapolis-St. Paul, MN, United States
Todd Hoare, McMaster University, Hamilton, ON, Canada

- 221.1 **Gemma Budd**, Lucideon, Stoke-on-Trent, United Kingdom N/A
221.2 **Katarina Vulic**, Novartis, Boston, MA, United States N/A
221.3 **Afsaneh Lavasanifar**, Professor, University of Alberta and CSO, Meros Inc, Edmonton, AB, Canada N/A

14:00 - 15:00

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222 - General Session Biomaterials for control of tissue induction

Chairs: Abram Daved Janis, Hollister Incorporated, Libertyville, IL, United States
Michiya Matsusaki, Department of Applied Chemistry, Osaka University, Graduate School of Engineering, Osaka, Japan

- 14:00 222.1 The roles of integrins and MAPK signaling pathways in the osteoinduction of biphasic calcium phosphate
Xuening Chen, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- 14:15 222.2 Micro-patterning directional fibronectin cues onto hydrogel scaffolds for cardiac tissue engineering
Quentin Jallerat, Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- 14:30 222.3 Approach to graft bioactive polymers on titanium implants by UV irradiations
Hamza Chouirfa, Paris 13 University, Villetaneuse, France, Metropolitan
- 14:45 222.4 Intracellular protein kinase C-alpha responsive gene carriers for malignant tumor cell specific therapy
Yoshiki Katayama, Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Fukuoka, Japan

14:00 - 15:00

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223 - New Frontiers Symposium Biomaterials for pluripotent stem cell culture and differentiation

Chairs: Binata Joddar, Biomedical Engineering, University of Texas at El Paso, El Paso, TX, United States
Tetsuji Yamaoka, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute (NCVC), Suita, Japan

- 14:00 223.1 Effect of timed and localized release of BMP-2 and VEGF on vascularized osteogenesis in a 3D co-culture of human mesenchymal and endothelial stem cells
Esmail Jabbari, Chemical Engineering, University of South Carolina, Columbia, SC, United States
- 14:15 223.2 Construction of oxidative stress-free cell culture system to maintain cellular morphology
Yutaka Ikeda, University of Tsukuba, Tsukuba, Japan
- 14:30 223.3 ASC spheroids formed in poly(L-glutamic acid)/chitosan scaffold to enhance hyaline-like cartilage regeneration
Kunxi Zhang, Shanghai University, Shanghai, P.R. China
- 14:45 223.4 A recombinant extracellular matrix of N-cadherin enhances generation and selection of pluripotent stem cell-derived neurons via suppression of Rho kinase.
Amranul Haque, Biomedical Engineering, University of California, Davis, CA, United States

14:00 - 15:00

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224 - New Frontiers Symposium Biomaterials as stem cell microenvironments

Chairs: Cole A Deforest, Chemical Engineering, University of Washington, Seattle, WA, United States
Qin Zou, Research Center for Nano-Biomaterials, Analytical & Testing Center, Sichuan University, Chengdu, P.R. China

- 14:00 224.1 Photoreversible patterning of hydrogel biomaterials with site-specifically-modified proteins
Cole A Deforest, Chemical Engineering, University of Washington, Seattle, WA, United States
- 14:15 224.2 Effect of glassy film micro/nanostructured topography on cell morphology
Yujie Zhu, McMaster University, Hamilton, ON, Canada
- 14:30 224.3 Optimization of dendrimer bridges in carbodiimide cross-linked amniotic membrane as a limbal epithelial stem cell niche
Jui-Yang Lai, Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan
- 14:45 224.4 Effects of hydroxyapatite on cell response on HA/GCPU composite scaffolds in vitro
Qin Zou, Research Center for Nano-Biomaterials, Analytical & Testing Center, Sichuan University, Chengdu, P.R. China

14:00 - 15:00 520b

225 - New Frontiers Symposium Biomaterials for bio-3D printing

Chairs: Ibrahim T Ozbolat, Engineering Science and Mechanics, Penn State University, University Park, PA, United States
Jurgen Groll, Department of Functional Materials in Medicine and Dentistry, University Hospital Würzburg, Würzburg, Germany

14:00 225.1 3D printing of a liver-inspired device for blood detoxification
Maling Gou, State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, West China Medical School, Sichuan University, Chengdu, P.R. China

14:15 225.2 3-D Bio-printed glioblastoma-vascular niche
Guohao Dai, Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States

14:30 225.3 Development of spatially controlled cell patch translocation mediated by shape-changing hydrogels with mussel-inspired micro-scaled pattern
Yu Bin Lee, Department of Bioengineering, Hanyang University, Seoul, Korea

14:45 225.4 3D bioprinting of multi-biomaterial/crosslinked bioink for skin tissue engineering
Hongbo Zhang, School of Mechanical and Power Engineering, East China University of Science and Technology, Shanghai, P.R. China

14:00 - 15:00 520c

226 - New Frontiers Symposium Smart biomaterials from complex structures of natural macromolecules

Chairs: Marisa M Beppu, School of Chemical Engineering, University of Campinas, Campinas, Brazil
Fernando Jorge Monteiro, Instituto Nacional de Engenharia Biomédica, Porto, Portugal

14:00 226.1 clickECM - a new approach to covalently immobilize human ECM on artificial surfaces
Silke Keller, Cell and Tissue Engineering, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany

14:15 226.2 Highly stretchable hydrogels obtained by controlled self-assembly of Hyaluronic Acid and Chitosan and preparation thereof
Gautier Lalevée, IMP@Lyon1 Laboratory, Laboratoire ObvieLine - Sinclair IS Pharma, Villeurbanne, France

14:30 226.3 Dextran and poly(butyl methacrylate) graft copolymers as non-adherent materials for vascular applications
Éléonore C Michel, Min-Met-Materials Eng, Laval University, Québec, QC, Canada

14:45 226.4 Fine-tunable micropattern of porosity to promote scaffold neovascularization
Elena Maria Varoni, Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy

14:00 - 15:00 524

227 - New Frontiers Symposium Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By:  ACS Biomaterials
SCIENCE & ENGINEERING

Chairs: Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal
Lei Yang, Orthopaedic Institute, Soochow University, Suzhou, P.R. China

14:00 227.1 Neural interfaces with electrically controllable manganese-enhanced magnetic resonance imaging for neuronal tracing in brain implantation
Wei-Chen Huang, Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States

14:15 227.2 Nanoparticles composed of extracellular matrix for immune modulation
Matthew T Wolf, Ophthalmology, Johns Hopkins University School of Medicine, Baltimore, MD, United States

14:30 227.3 Silver-doped diamond-like carbon: towards highly stable antibacterial coatings
Maxime Cloutier, Laboratoire de Biomateriaux et Bioingénierie, Université Laval, Québec, QC, Canada

14:45 227.4 Responsive gelation of nanoparticle/gel composites for sustained drug delivery
Adam R Town, Department of Chemistry, University of Liverpool, Liverpool, United Kingdom

14:30 - 15:30 513def

Affiliated Meeting Society for Biohydrogels (open to members and non-members)

14:30 - 16:00 525

Affiliated Meeting The Society for Biomaterials and Artificial Organs (India) - open to members

15:00 - 16:30 220bcd

Poster Viewing Session 1B See page 179

15:30 - 17:00 446

Affiliated Meeting
SFB and CSBM (China) Bilateral Mtg
(by invitation only)

15:30 - 16:30 513def

Affiliated Meeting
International College of Fellows Biomaterials
Science and Engineering (ICF-BSE) Fellows Session
(by invitation only)

16:30 - 18:30 510a

229 - General Session
Naturally-derived materials and biopolymers

Chairs: Paul Gratzer, School of Biomedical Engineering, Dalhousie University, Halifax, NS, Canada
 Abhay Pandit, Center for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland

- 16:30 229.1 Molecular engineering of the urethra for treatment of stress incontinence using a novel biomimetic aggregate ex vivo and in vivo
Alicia S Kriete, Materials engineering, Drexel University, Philadelphia, PA, United States
- 16:45 229.2 The effect of sulfation in glycosaminoglycan (GAG)-mimetic scaffolds on promoting chondrogenesis
Gloria R Portocarrero Huang, Biomedical Engineering, New Jersey Institute of Technology, Union City, NJ, United States
- 17:00 229.3 Crosslinked mucin hydrogels for drug delivery
Thomas Crouzier, School of Biotechnology, KTH Royal Institute of Technology, Stockholm, Sweden
- 17:15 229.4 Biodegradable scaffolds for tissue engineering applications generated by electrostatic flocking
Elke Gossia, Centre for Translational Bone, Joint and Soft Tissue Research, University Hospital and Medical Faculty, Technische Universität Dresden, Dresden, Germany
- 17:30 229.5 Clickable silk: novel silk materials containing azide reactive groups
Hidetoshi Teramoto, Silk Materials Research Unit, National Agriculture and Food Research Organization, Tsukuba, Japan
- 17:45 229.6 Spider silk materials genetically engineered with enzyme activity
Ronnie Jansson, Spiber Technologies AB, Stockholm, Sweden
- 18:00 229.7 Precisely-controlled DNA-templated micelle as a multifunctional delivery platform for glioblastoma therapeutics
Yeh-Hsing Lao, Department of Biomedical Engineering, Columbia University, New York, NY, United States
- 18:15 229.8 Assembly of self-peptides and regulatory nucleic acids to promote immune tolerance
Krystina L Hess, Fischell Department of Bioengineering, University of Maryland College Park, College Park, DC, United States

16:30 - 18:15 510b

230 - New Frontiers Symposium
Intracellularly acting nano-structured biomaterials

Chairs: Nobuhiko Yui, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
 You-Han Bae, Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT, United States

- 16:30 230.1 Smart targeted therapy by self-assembled supramolecular nanosystems
Kazumori Kataoka, Materials Engineering, The University of Tokyo, Tokyo, Japan
- 17:00 230.2 Therapeutic approach to lysosomal storage disorders based on acid-labile polyrotaxanes
Atsushi Tamura, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- 17:15 230.3 Effect of chiral poly(acryloyl-valine) Capped on AuNPs on protein adsorption and cellular uptake
Changyou Gao, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- 17:30 230.4 Cell membrane-permeable and cytocompatible phospholipid polymer nanoprobes conjugated with molecular beacons
Xiaojie Lin, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan
- 17:45 230.5 Alg-g-PEG nanosphere-mediated intracellular growth factor delivery inhibits cancer cell proliferation
Tianxin Miao, School of Engineering, University of Vermont, Burlington, VT, United States
- 18:00 230.6 Preparation and cellular uptake of thermoresponsive transformable nanoparticles
Akihiko Kikuchi, Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan

16:30 - 18:30

511e

231 - Round Table Panel Discussion Clinical entry of biomaterials and biomaterials related technologies

Sponsored By:



Chairs: Michael D Buschmann, Chemical Engineering, Polytechnique Montreal, Montreal, QC, Canada
Michel Assad, Orthopedics and Biomaterials, AccellLAB Inc., Boisbriand, QC, Canada

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|-------|---|-----|
| 231.1 | Marc Long, Orthobiologics Research & Development, Stryker Spine, Allendale, NJ, United States | N/A |
| 231.2 | Benoit Schaller, Department of Cranio-Maxillofacial Surgery, Inselspital Bern, University Hospital, Bern, Switzerland | N/A |
| 231.3 | Mimoun Ayoub, Global Peptides, Lipids, Carbohydrates and Injectables, CordenPharma, Liestal, Switzerland | N/A |
| 231.4 | Elaine Duncan, Paladin Medical, Inc., Stillwater, MN, United States | N/A |

16:30 - 18:30

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232 - New Frontiers Symposium Multifunctional biomolecular interfaces for orthopaedic applications

Chairs: Jonathan Knowles, Division of Biomaterials and Tissue Engineering, University College London Eastman Dental Institute, London, Thomas J Webster, Chemical Engineering, Northeastern University, Boston, MA, United States

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| 16:30 | 232.1 Multifunctional and bioactive soft coatings by electrophoretic deposition
Aldo Boccaccini , Institute of Biomaterials, University of Erlangen-Nuremberg, Erlangen, Germany |
| 17:00 | 232.2 DNA-based modular immobilization system for biological functionalization of biomaterial surfaces
Dieter Scharnweber , Max Bergmann Center, TU Dresden, Dresden, Germany |
| 17:15 | 232.3 Nanotopographical cell stimulation by the electrodeposited carbon nanotubes-based surfaces
Chinmaya Mahapatra , Department of Nanobiomedical Science, Institute of Tissue Regeneration Engineering, Dankook University, Cheonan, Korea |
| 17:30 | 232.4 How cells internalize a growth factor presented by a biomaterial : BMP-2 delivery to cells in a matrix-bound manner using layer-by-layer films
Catherine Picart , Bioengineering, Grenoble Institute of Technology, Grenoble, France |

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| 17:45 | 232.5 In vivo testing of biphasic scaffold design parameters for integrative tendon repair
Helen H Lu , Biomedical Engineering, Columbia University, New York, NY, United States |
| 18:00 | 232.6 Self-assembled bioactive membranes for bone regeneration
Helena S Azevedo , School of Engineering & Materials Science, Queen Mary University of London, London, United Kingdom |
| 18:15 | 232.7 Designing a collagen-based biomaterial for multi-tissue regeneration at the tendon-bone junction
Laura C Mozdzen , Chemical and Biomolecular Engineering, University of Illinois, Urbana, IL, United States |

16:30 - 18:30

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233 - New Frontiers Symposium Standardization in evaluations of biodegradable metals

Chairs: Yufeng Zheng, Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing, P.R. China
Frank Witte, Julius Wolff Institute and Berlin-brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany

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| 16:30 | 233.1 Standardization in evaluations of in vitro and in vivo degradation performance of biodegradable magnesium staples used in stapler for gastrointestinal anastomosis
Jing Bai , School of Materials Science and Engineering, Southeast University, Dahka, P.R. China |
| 16:45 | 233.2 Effects of extract conditions on Mg alloy degradation for biological safety evaluation
Akiko Yamamoto , Biometals Group, Biomaterials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan |
| 17:00 | 233.3 Modified cytotoxicity test protocol for Mg metals developed for class III medical devices
Jiali Wang , Orthopaedics and Traumatology, Chinese University of Hong Kong, Hong Kong, Hong Kong |
| 17:15 | 233.4 Mesenchymal stem cell response to magnesium alloy corrosion product
Yang Liu , Centre of Biological Engineering, Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, Loughborough, United Kingdom |
| 17:30 | 233.5 Modulating the degradation behaviour of iron-based alloys by grain-sizing and alloying
Agung Purnama , Laboratory for Biomaterials and Bioengineering, Montreal, QC, Canada |

17:45 233.6 Flow cytometry: a new tool to analyze the foreign body response to biodegradable and permanent implants in rats
Tanja TS Schmidt, Berlin Brandenburger Center for Regenerative Therapies, Julius Wolff Institute, Charite-Universitaetsmedizin Berlin, Berlin, Germany

18:00 233.7 Grain size distribution effects on the degradation and mechanical behaviours of biodegradable metallic biomaterials
Camillus CSO Obayi, Department of Metallurgical & Materials Engineering, University of Nigeria, Nsukka, Nigeria

18:15 233.8 Recommendation of Scanning Vibrating Electrode Technique (SVET) to standardized draft "Guide to In vitro Degradation Testing of Absorbable Metals"
Yufeng Zheng, Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing, P.R. China

16:30 - 18:30 516a

234 - General Session

ACTA Biomaterialia Gold Award Session on biomimetic implant surfaces

Chairs: **Marc Bohner**, RMS Foundation, Bettlach, Switzerland
Pamela Habibovic, Instructive Biomaterials Engineering, Maastricht University, Maastricht, Netherlands
Arthur J Coury, Chemical Engineering, Northeastern University, Boston, MA, United States

16:30 234.1 Biomimetic implant surfaces: chinese input in dutch CaP research
Klaas De Groot, ACTA School of Dentistry, Free University, Amsterdam, Heemstede, Netherlands

17:00 234.2 Modulation of stem cell behaviour using binary colloidal crystals with complex surface topography and chemistry
Peng-Yuan Wang, Chemical and Biotechnology, Swinburne University of Technology, Melbourne, Australia

17:15 234.3 Osteogenesis of biomimetic calcium phosphate coating on porous tantalum implants
Huipin Yuan, MERLN, Maastricht University, Maastricht, Netherlands

17:30 234.4 Surface micropatterning with calcium phosphate ceramics by micromoulding in capillaries
Daniel De Melo Pereira, Instructive Biomaterials Engineering, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht, Netherlands

17:45 234.5 Biomimetic calcium phosphate bone substitute for bone tissue engineering
Yuelian Liu, Oral Implantology, VU University, Amsterdam, Netherlands

18:00 234.6 Intrinsic osteoinduction of biomimetic nanostructured calcium phosphate scaffolds
Maria-Pau Ginebra, Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Metallurgy, Universitat Politècnica de Catalunya, BarcelonaTech, Barcelona, Spain

18:15 234.7 Controlled and tunable biomimetic apatite mineralization of synthetic hydrogels
Jacqueline L Harding, Biological and Chemical Engineering, Colorado School of Mines, Golden, CO, United States

16:30 - 18:30 516c

235 - Science in Industry 3

Wound care and Biomaterials and anti-infective strategies

16:30 WOUND CARE

Chairs: **Mark Richardson**, Smith & Nephew, Hull, United Kingdom
Kris Kieswetter, Acelity, San Antonio, TX, United States
Aziz Ghahary, University of British Columbia, Vancouver, BC, Canada

235.1 **Jeremy Harris**, Secant Medical, Telford, PA, United States N/A

235.2 **Abram Janis**, Hollister Inc., Chicago, IL, United States N/A

235.3 **Chandra Panchal**, Axcelon Biopolymers Corp., Montreal, QC, Canada N/A

17:30 BIOMATERIALS AND ANTI-INFECTIVE STRATEGIES

Chairs: **Jochen Salber**, Universitätsklinikum Knappschaftskrankenhaus Bochum, Germany
Jim Curtis, Healthcare, Dow Corning Corp., Midland, MI, USA
Wankei Wan, Western University, London, ON, Canada

235.4 **Imran Khan**, Global Anti-infective and innovative Solutions, Zimmer Biomet, Swindon, United Kingdom N/A

235.5 **Chelsea M Magin**, Director of Product Development, Sharklet Technologies, Inc., Denver, CO, United States N/A

235.6 **Amanda Grande**, Covalon Technologies Ltd., Mississauga, ON, Canada N/A

16:30 - 18:30

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236 - Special Session

Society for Biomaterials (SFB) US Awards

Welcome & Introduction by Tom Webster and Joel Bumgardner

Award Presentations

C. William Hall Award

Jim Curtis, ME, Dow Corning Corporation

SFB Award for Service

Alan Litsky, MD, ScD, Ohio State University

Young Investigators Award

Fan Yang, PhD, Stanford University

Outstanding Research by a Hospital Intern

Yalini Vigneswaran, MD, University of Chicago

Student Awards for Outstanding Research

Jose Garcia, Georgia Institute of Technology

Student Awards for Outstanding Research

Abigail Erin Lonaker, University of Pittsburgh

Student Awards for Outstanding Research

Veronica Ibarra, Illinois Institute of Technology

C. William Hall Scholarship

Amjad Akif, The Ohio State University

Cato T. Laurencin Travel Fellowships

Robert De Loera - University of Chicago

Dwight Meggie - University of Connecticut

Julian Rose - University of Connecticut

Award Addresses

236.1 Founders Award N/A

Cato Laurencin, MD, PhD, University of Connecticut

Clemson Award for Applied Research

Justin Hanes, PhD, The Johns Hopkins University School of Medicine

236.2 Clemson Award for Basic Research N/A

Molly Stevens, PhD, Imperial College of London

236.3 Clemson Award for Contributions to the Literature N/A

Rocky Tuan, PhD, University of Pittsburgh

236.4 Technology, Innovation and Development Award N/A

Joseph Salamone, PhD, Rochal Industries LLC

16:30 - 18:30

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237 - General Session

Biomaterials for therapeutic delivery

Chairs: **Marcus Rohnke**, Institute for Physical Chemistry, Justus-Liebig University Giessen, Giessen, Germany
Balaji Sitharaman, Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States

16:30 237.1 Performance of collagen-based corneal implant with anti-infective capability in rabbit model of infectious keratitis
Andri K Riau, Tissue Engineering and Stem Cell Group, Singapore Eye Research Institute, Singapore, Singapore

16:45 237.2 Preparation of poly(μ -caprolactone) based alternating multilayered composites and the controlled drug release behavior
Shaoyun Guo, Sichuan University, Chengdu, P.R. China

17:00 237.3 Mechanical properties of injection site govern performance of in situ forming polymer implants
Natalia I Gawlik, Case Western Reserve University, Cleveland Heights, OH, United States

17:15 237.4 Hydrogel microfibers targeting inflammation for localized drug delivery in inflammatory bowel disease
Sufeng Zhang, Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States

17:30 237.5 Liposome loaded chitosan hydrogels: a promising delayed release kinetics mechanism.
Jacques Desbrieres, IPREM, Université de Pau et des Pays de l'Adour (UPPA), Pau, France

17:45 237.6 Injectable composite hydrogels containing mesoporous silica nanoparticles for controlled release of chemotherapeutics
Gerardino D' Errico, Department of Chemical Sciences, University of Naples, Federico II, Napoli, Italy

18:00 237.7 Synthesis and characterization of PEGylated near-IR-emitting Ag₂S quantum dots for tumor imaging and therapy
Fatma Demir Duman, Graduate School of Materials Science and Engineering, Koç University, Istanbul, Turkey

18:15 237.8 Immune cell-based drug delivery system with biodegradable fluorescent nanoparticles for brain cancer treatment
Gloria Bora Kim, Bioengineering, Pennsylvania State University, State College, PA, United States

16:30 - 18:30

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238 - New Frontiers Symposium Nanobiomechanics of living tissue and cells

Chairs: *Isaac Kuo-Kang Liu, Warwick University, Coventry, United Kingdom*
Fabia Variola, University of Ottawa, Ottawa, ON, Canada

- 16:30 238.1 Mechanics of adhesion-aggregation-detachment in water filtration
Kai-tak Wan, Mechanical and Industrial Engineering, Northeastern University, Boston, MA, United States
- 17:00 238.2 Photoactivatable compliant substrates for precise analysis of mechanobiological regulation in collective cell migration
Jun Nakanishi, International Center for Materials Nanoarchitectonics (MANA), National Institute for Science (NIMS), Tsukuba, Japan
- 17:15 238.3 Polymeric mechanical amplifiers of receptor-mediated apoptosis
Michael J Mitchell, Department of Chemical Engineering and the David H. Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States
- 17:30 238.4 Collagen matrix stiffness influencing on fibroblast contraction force
Isaac Kuo-Kang Liu, Warwick University, Coventry, United Kingdom
- 17:45 238.5 The effects of frequency on matrix remodeling induced in dynamically strained collagen-based cellularised scaffolds
Lucie Levesque, Department of Mining, Metallurgy and Materials, Université Laval, Québec, QC, Canada
- 18:00 238.6 Microengineered smart material probes to measure local 3D tissue stiffness in situ
Christopher Moraes, Chemical Engineering, McGill University, Montreal, QC, Canada
- 18:15 238.7 Mechanical characterization of electrospun collagen fibers using atomic force microscopy
Ying Li, Biomedical Engineering Graduate Program, The University of Western Ontario, Scarborough, ON, Canada

16:30 - 18:30

520b

239 - New Frontiers Symposium Biomaterials for bio-3D printing

Chairs: *Binil Starly, Industrial Engineering, North Carolina State University, Raleigh, NC, United States*
Will Wenmiao Shu, School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, United Kingdom

- 16:30 239.1 Bio-3D printing: challenges and opportunities
Wei Sun, Mechanical Engineering, Tsinghua University, Beijing, P.R. China
- 16:45 239.2 Bioprinting heterogeneous 3D tumor models
Tao Jiang, Mechanical Engineering, McGill University, Montreal, QC, Canada
- 17:00 239.3 Electrolyte-assisted electrospinning for a highly aligned, free-standing nanofiber membrane integrated with a microfluidic device for the alignment of endothelial cells
Sang Min Park, Pohang University of Science and Technology (POSTECH), Gyeongbuk, Korea
- 17:15 239.4 3D printed novel PGSm nerve guidance conduits for In vivo analysis
Dharaminder Singh, Materials Science and Tissue Engineering, University of Sheffield, Peterborough, United Kingdom
- 17:30 239.5 From 3D to 4D bio-printing - design and fabrication of a biomimetic scaffold with oriented porous structure and multi-branch network for myocardial tissue engineering
Ting Zhang, Department of Mechanical Engineering, Tsinghua University, Beijing, P.R. China
- 17:45 239.6 3D-printing bioresorbable vascular stents with metal stent-matching recoil strength
Robert Van Lith, Biomedical Engineering, Northwestern University, Chicago, IL, United States
- 18:00 239.7 In vitro fabrication of complex vasculatures embedded in 3D-tissues
Haruki Ikeguchi, Graduate School of Engineering, Osaka University, Osaka, Japan
- 18:15 239.8 A bioprinted pancreatic tissue model with multiscale vascularization
Ibrahim T Ozbolat, Engineering Science and Mechanics, Penn State University, University Park, PA, United States

16:30 - 18:30

520c

240 - New Frontiers Symposium Bioinspired materials and devices for regenerative medicine

Sponsored By:



- Chairs:* Manuel Salmeron-Sanchez, School of Engineering, University of Glasgow, Glasgow, United Kingdom
Shengmin Zhang, Huazhong University of Science and Technology, Wuhan, P.R. China
-
- 16:30 240.1 Cells in or out from particles in biomimetic regeneration strategies
Joao F Mano, Department of Chemistry, Aveiro Institute of Materials (CICECO), University of Aveiro, Aveiro, Portugal
-
- 17:00 240.2 Integrin-specific hydrogels for increased vascularization and bone regeneration of critically-sized bone defects
Jose R Garcia, Department of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
-
- 17:15 240.3 On the potential of static culture for the reinforcement of collagen-based tissue-engineered vascular substitutes through cell remodeling
Sebastien Meghezi, Mining, Metallurgy and Materials engineering, Laval University, Quebec, QC, Canada
-
- 17:30 240.4 Mitigation of hypertrophic scar contraction via anti-TNFalpha conjugated hyaluronic acid gels and poly(L-lactide-co-epsilon-caprolactone) electrospun scaffolds
Elizabeth R Lorden, Biomedical Engineering, Duke University Medical Center, Durham, NC, United States
-
- 17:45 240.5 Biomimetic skin substitutes created from tropoelastin help to promote wound healing
Robert S Kellar, Center for Bioengineering Innovation, Northern Arizona University, Flagstaff, AZ, United States
-
- 18:00 240.6 Shape memory poly(urethane-urea) and its application as a smart device for bone regeneration
Yanfeng Luo, College of Bioengineering, Chongqing University, Chongqing, P.R. China
-
- 18:15 240.7 Evaluation of porous polyhydroxyalkanoate (PHA) fibres as tissue engineering scaffold
Pooja Basnett, Faculty of Science and Technology, University of Westminster, London, United Kingdom

16:30 - 18:15

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241 - New Frontiers Symposium Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By:



- Chairs:* Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal
Eun Ji Chung, University of Chicago, Chicago, IL, United States
-
- 16:30 241.1 Quantifying the contributions of implant hydrophilicity and nanotopography on bone anchorage
Robert S Liddell, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada
-
- 16:45 241.2 Tetracycline-incorporated nanofibrous coating on titanium to prevent early implant infection and enhance cell response
Marco C Bottino, Biomedical and Applied Sciences, Indiana University School of Dentistry, Indianapolis, IN, United States
-
- 17:00 241.3 Dip and dry micropattern capable bioactive coatings for modulating biomaterial associated inflammation
Paul J Taylor, Chemistry, University of Sheffield, Sheffield, United Kingdom
-
- 17:15 241.4 Control of Poly(glycerol sebacate) properties by varying levels of crosslinking using a fast microwave approach
Chi Ching Lau, Department of Chemical Engineering, University College London, London, United Kingdom
-
- 17:30 241.5 Study of cell behaviors on anodized TiO2 nanotube arrays with different structures
Jiahua Ni, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China
-
- 17:45 241.6 Platelet-like proteoliposomes enable active drug delivery to infarcted heart tissue
Bill Cheng, Institute of Biomedical Science, Academia Sinica, Taipei, Taiwan
-
- 18:00 241.7 Biomimetic n-HA/GCO-PU composite scaffold with hierarchical structure for bone regeneration
Yubao Li, Research Center for Nano Biomaterials, Analytical & Testing Center, Chengdu, P.R. China

DETAILED PROGRAM

THURSDAY, MAY 19, 2016

17:00 - 17:45

513a

242 - Tutorial

AngioDynamics - Engineering surface blood compatibility into catheter products: endexo technology into BioFlo catheters

Sponsored By:  **angiodynamics**

-
- 242.1 **J Paul Santerre**, Faculty of Dentistry, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada N/A
 - 242.2 **Mark Girard**, AngioDynamics, Latham, NY, United States N/A
 - 242.3 **Stephanie Pitts**, AngioDynamics, Latham, NY, United States N/A

17:00 - 17:45

513b

243 - Tutorial

Anton Paar GmbH - The importance of the surface charge in biomaterials applications

Sponsored By:  **Anton Paar**

-
- 243.1 **Thomas Luxembacher**, Anton Paar GmbH, Graz, Austria N/A

17:00 - 17:45

513c

244 - Tutorial

Evonik - Resorbable biomaterials: their evolving properties and advanced applications

Sponsored By:  **EVONIK INDUSTRIES**

-
- 244.1 **Adolphus Jones**, Senior Scientist, Evonik Corporation, Birmingham, AL, United States N/A
 - 244.2 **Balaji Prabhu**, Head, Orthopaedic Materials, Evonik Corporation, Birmingham, AL, United States N/A
 - 244.3 **Mahrokh Dadsetan**, Project Manager, Evonik Corporation, Birmingham, AL, United States N/A

DAY-AT-A-GLANCE

FRIDAY, MAY 20, 2016

07:30 - 17:30	Viger Hall - L200		Registration Desk	Registration open
09:00 - 18:00	220bcd		Exhibits	Exhibits open
08:30 - 09:30	517bcd	300	Plenary	Plenary Session 3 - David Mooney
09:30 - 10:00	220bcd		Coffee Break	Coffee Break, Exhibits and Poster Viewing
10:00			Concurrent Sessions	
10:00 - 12:15	510a	301	General Session	Electrospinning and related technologies
10:00 - 12:00	510b	302	New Frontiers Symposium	Emerging cell-instructive materials for regenerative niche
10:00 - 12:30	511e	303	General Session	Biomaterials for therapeutic delivery - nanoparticulate systems
10:00 - 12:30	511f	304	General Session	Biomaterials evaluation in animal models
10:00 - 12:00	516a	306	New Frontiers Symposium	Nanobiomaterials and nanotechnology for implants, devices, and theranostics
10:00 - 12:30	516c	307	General Session	Synthetic scaffolds as extracellular matrices
10:00 - 12:30	517a	308	New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
10:00 - 12:00	518	309	General Session	Biomaterials for control of tissue induction
10:00 - 12:00	519	310	General Session	Biodegradable polymers
10:00 - 12:15	520b	311	General Session	Biomaterials in dental applications
10:00 - 12:30	520c	312	New Frontiers Symposium	Calcium phosphate mineralization and maturation for biomaterials
10:00 - 12:15	524	313	New Frontiers Symposium	Injectable biomaterials for cell therapy and tissue engineering
12:00 - 14:00			Lunch Break	Lunch, Exhibits, Poster Viewing
12:30 - 13:30	512	314	Lunch & Learn Session	Lunch & Learn Sessions (Sold-out)
12:15 - 15:30	517a	315	Technical Forum	Translational science of lactide-based resorbable polymers: From lab to commercial application
12:30 - 14:00	513def		Affiliated Meeting	SFB Annual Business Meeting - open to members
12:35 - 13:50	515		Affiliated Meeting	SFB National Student Chapter Meeting - open to student members
13:30 - 16:00	514a		Affiliated Meeting	Elsevier Board Meeting: Biomaterials Journal (by invitation only)
14:00 - 15:00			Concurrent Sessions	
14:00 - 15:00	510a	316	General Session	Layer-by-layer deposition and self-assembly
14:00 - 15:00	510b	317	General Session	Adhesive biomaterials
14:00 - 15:00	511e	318	General Session	Tissue targeting nanoparticles
14:00 - 15:00	511f	319	General Session	Role of biomaterials in inflammation
14:00 - 15:00	515	320	New Frontiers Symposium	Standardization in evaluations of biodegradable metals
14:00 - 15:00	516a	321	General Session	Ceramics
14:00 - 15:00	516c	322	New Frontiers Symposium	Biomaterials as stem cell microenvironments
14:00 - 15:00	518	323	General Session	Biomaterials for control of tissue induction
14:00 - 15:00	519	324	General Session	Biomaterials in nerve regeneration
14:00 - 15:00	520b	325	General Session	Biomaterials in dental applications
14:00 - 15:00	520c	326	General Session	Nanotopography of biomaterials
14:00 - 15:00	524	327	New Frontiers Symposium	Injectable biomaterials for cell therapy and tissue engineering
14:00 - 16:00	525		Affiliated Meeting	Japanese Society for Biomaterials (JSB) Annual General Meeting - open to members
15:00 - 16:30	220bcd		Poster Networking	Poster Session 2A and Refreshments
15:00 - 17:00	513def		Affiliated Meeting	Latin-American Society for Biomaterials (SLABO) Annual General Meeting - open to members
16:30			Concurrent Sessions	
16:30 - 18:30	510a	329	New Frontiers Symposium	Open-source and low-cost tools and technologies for advanced biomaterials fabrication
16:30 - 18:15	510b	330	General Session	Nano-structured materials for unique functions
16:30 - 18:30	511e	331	New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
16:30 - 18:15	511f	332	General Session	Drug-eluting devices
16:30 - 18:15	515	333	New Frontiers Symposium	Biomedical imaging and theranostics: biomaterial design and applications
16:30 - 18:30	516a	334	New Frontiers Symposium	Recombinant proteins as emerging biomaterials
16:30 - 18:15	516c	335	General Session	Synthetic scaffolds as extracellular matrices
16:30 - 18:30	517a	336	Round Table Panel Discussion	Life-long learning
16:30 - 18:30	518	337	New Frontiers Symposium	Biomaterial approaches to engineering the neural interface
16:30 - 17:45	519	338	New Frontiers Symposium	Biomaterials as stem cell microenvironments
16:30 - 18:30	520b	339	Special Session	ASBTE, CBS, CSBM and ESB Awards Session
16:30 - 18:30	520c	340	New Frontiers Symposium	Calcium phosphate mineralization and maturation for biomaterials
16:30 - 18:15	524	341	New Frontiers Symposium	Injectable biomaterials for cell therapy and tissue engineering
17:00			Tutorials	
17:00 - 17:45	513a	342	Tutorial	Protip Medical - International academic/industrial research collaboration and the best practices for their valorization: cases of EU FP7 IMMDOGEL and NanoTi projects
17:00 - 17:45	513b	343	Tutorial	DSM - Controlling biologic response to biomaterials through the addition of autologous solutions
17:00 - 18:00	513c	344	Tutorial	SFB BMPC SIG - Biomaterials and medical products commercialization: Regulatory case studies - How to get to market?
19:30 - 23:30	517bcd		Social Event	Montreal Vibe - A Night in the Park (Congress Party)

A New Generation of Resorbable Medical Devices

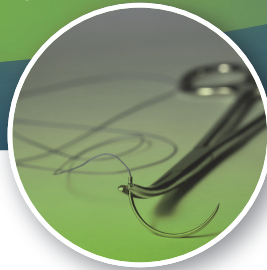
Tepha has a long history of developing unique resorbable fibers, sutures and mesh products from its proprietary TephafLEX® biomaterial made from poly-4-hydroxybutyrate (P4HB).

P4HB is a homopolymer of 4-hydroxybutyrate (4HB) and belongs to a diverse class of materials called polyhydroxyalkanoates (PHAs) that are produced naturally by microorganisms.

The TephafLEX polymer is a thermoplastic linear polyester with extremely high purity that can be converted into a wide range of medical devices such as sutures, films and textile products, many of which are FDA cleared for human use.

Key Attributes of Tepha's Biomaterial

- Fully resorbable material with no foreign material left behind
- Material has a predictable degradation profile and long-term strength
- Low inflammation and excellent biocompatibility
- Amenable to multiple processing techniques
- P4HB implanted in over 1M patients



Competitive Polymers Comparison to P4HB

P4HB has the flexibility, resorption rate, and biocompatibility properties ideally suited to many medical device applications.

Mechanical Properties



Resorption Rate

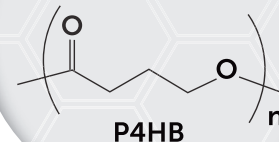


Degradation Biocompatibility



PGA = Polyglycolic Acid PLLA = Polylactic Acid PDS = Polydioxanone P4HB = Poly-4-Hydroxybutyrate

Chemical Structure



Tepha, Inc.
99 Hayden Avenue
Lexington MA 02421
781-357-1700
contact@tepha.com
www.tepha.com

DETAILED PROGRAM

FRIDAY, MAY 20, 2016

07:30 - 17:30

Viger Hall - 200 level

Registration open

09:00 - 18:00

220bcd

Exhibits open

08:30 - 09:30

517bcd

300 - Plenary

Plenary Session 3

Chairs: Kazunori Kataoka, Materials Engineering, The University of Tokyo, Tokyo, Japan

Kristi Anseth, Chemical and Biological Engineering, University of Colorado, Boulder, CO, United States

- 300.1 Therapeutic cancer vaccines from biomaterials
David Mooney, Harvard University, Cambridge, MA, United States

09:30 - 10:00

220bcd

Coffee Break, Exhibits and Poster Viewing

10:00 - 12:15

510a

301 - General Session

Electrospinning and related technologies

Chairs: Maria Letizia Focarete, Department of Chemistry "Giamician", University of Bologna, Bologna, Italy
Wankei Wan, Chemical and Biochemical Engineering, University of Western Ontario, London, ON, Canada

- 10:00 301.1 Shape memory properties of electrospun non-woven mat prepared from sol-gel crosslinked poly(ϵ -caprolactone)
Andrea Merlettoni, University of Bologna, Bologna, Italy
- 10:15 301.2 Development of a novel tissue engineered construct for periosteum regeneration using a star-PEG heparin hydrogel system
Elena M De-Juan-Pardo, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia
- 10:30 301.3 Preparation of PLA composites containing calcium carbonate with cotton wool-like structure for bone regeneration
Toshihiro Kasuga, Division of Advanced Ceramics, Nagoya Institute of Technology, Nagoya, Japan
- 10:45 301.4 In-line blending of electrospun fibers to generate aligned grafts with gradient properties
Alysha P Kishan, Biomedical Engineering, Texas A&M University, College Station, TX, United States
- 11:00 301.5 Electrospinning of a disulfonated chitosan as an artificial GAG for tissue engineering
Safa Ouerghemmi, UMET, University of Lille, Villeneuve d'Ascq, France
- 11:15 301.6 Engineering of a collagen-based extracellular matrix mimetic scaffold via electrospinning
Jorge L Almodovar, Department of Chemical Engineering, University of Puerto Rico Mayaguez, Mayaguez, Puerto Rico
- 11:30 301.7 Electrospinning with benign solvents: feasibility study and versatile use of poly(ϵ -caprolactone) fibers
Liliana Liverani, Institute of Biomaterials, Department for Materials Science and Engineering, University Erlangen-Nuremberg, Erlangen, Germany
- 11:45 301.8 Mechanical properties of electrospun gelatin scaffolds
Annabel L Butcher, Department of Engineering, University of Cambridge, Cambridge, United Kingdom

10:00 - 12:00

510b

302 - New Frontiers Symposium

Emerging cell-instructive materials for regenerative niche

- Chairs:* *Changsheng Liu, Engineering Research Center of Biomedical Materials under Ministry of Education, East China University of Science and Technology, Shanghai, P.R. China*
Emily C Beck, Surgery, University of Kansas, Lawrence, KS, United States
Arghya Paul, Department of Chemical and Petroleum Engineering, Bioengineering Program, University of Kansas, Lawrence, KS, United States
-
- 10:00 302.1 Biomimetic interfaces to trigger tissue restoration
Ennio Tasciotti, Regenerative Medicine, Houston Methodist Research Institute, Houston, TX, United States
-
- 10:15 302.2 Composite living fibers made from interpenetrating hydrogel networks
Mohsen Akbari, Mechanical Engineering, University of Victoria, Victoria, BC, Canada
-
- 10:30 302.3 Oxygenated fluorinated methacrylamide chitosan hydrogel dressings enhance wound healing through improvement in targeted metabolic processes
Pritam S Patil, Chemical and Biomolecular Engineering, University of Akron, Akron, OH, United States
-
- 10:45 302.4 MicroRNA as an emerging cell-instructive material to regulate cardiomyocyte cell cycle and mitochondrial biogenesis
Raghav Pandey, Division of Regenerative Medicine, University of Cincinnati College of Medicine, Cincinnati, OH, United States
-
- 11:00 302.5 Macroporous microribbon-based hydrogels enhance stem cell survival and bone regeneration in a mouse critical-size cranial defect model
Fan Yang, Orthopaedic Surgery and Bioengineering, Stanford University, Stanford, CA, United States
-
- 11:15 302.6 Real time 3D in situ assessments for bone tissue engineering
Natalie Reznikov, Department of Materials, Imperial College London, London, United Kingdom
-
- 11:30 302.7 A new decellularized dermal matrix: superior properties and in-vivo performance when compared with the leading commercial product
Paul Gratzner, School of Biomedical Engineering, Dalhousie University, Halifax, NS, Canada
-
- 11:45 302.8 Hyaluronan-based multifunctional hydrogels formed via enzyme-mediated crosslinking
Dominic W Collis, School of Engineering, Queen Mary, University of London, Slough, United Kingdom

10:00 - 12:30

511e

303 - General Session

Biomaterials for therapeutic delivery - nanoparticulate systems

- Chairs:* *Akihiko Kikuchi, Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan*
J. Carlos Rodriguez-Cabello, University of Valladolid, G.I.R. Bioforge, Valladolid, Spain
-
- 10:00 303.1 Nanographene oxide - hyaluronic acid conjugate for photothermal ablation therapy of skin cancer
Ho Sang Jung, Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea
-
- 10:15 303.2 Combination of vascular disrupting agents and nanomedicines for solid tumor therapy
Xuesi Chen, Key Laboratory of Polymer Ecomaterials, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, P.R. China
-
- 10:30 303.3 Magnetic ferri-liposomes for triggered drug release across the blood-brain barrier
Di Shi, Northeastern University, Boston, MA, United States
-
- 10:45 303.4 Spontaneous arrangement of hyaluronic acid on plga based nanoparticles for liver tumor targeting
Assunta Borzacchiello, National Research Council of Italy, Istituto IPCB, Napoli, Italy
-
- 11:00 303.5 Bioresorbable polymeric-based nanodevices as a controlled release system for Alzheimer's disease therapy
Geisa N Salles, Laboratory of Biomedical Nanotechnology, Universidade do Vale do Paraíba, Taubaté, Brazil
-
- 11:15 303.6 Novel peptide-decorated paclitaxel-loaded polyester-based nanoparticles as delivery systems for brain tumors therapy
Cristina Fornaguera, Sagetis Biotech, Barcelona, Spain
-
- 11:30 303.7 Polymeric nanospheres for topical delivery of vitamin D3
Bozena B Michniak-Kohn, Pharmacy/Pharmaceutics, Rutgers-The State University of New Jersey, Piscataway, NJ, United States
-
- 11:45 303.8 Nanoparticle loaded coatings and patches on live cells
Brad J Berron, Chemical and Materials Engineering, University of Kentucky, Lexington, KY, United States
-
- 12:00 303.9 Loading and release of porous silicon nanoparticles with Flightless I neutralizing antibodies to aid wound healing
Steven J P McInnes, Mawson Institute, UniSA, Mawson Lakes, Australia
-
- 12:15 303.10 Enhancing oligodendrocyte differentiation and maturation by nanoparticle-mediated olig1/2 expression
Xiaowei Li, Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, United States

10:00 - 12:30

511f

304 - General Session

Biomaterials evaluation in animal models

Chairs: *Louis-Georges Guy, AccellAB Inc., Boisbriand, QC, Canada*
Carl R Mcmillin, Synthetic Body Parts, Inc., Brecksville, OH, United States

- 10:00 304.1 Impregnate pre-made CarboSil 20 80A catheters with 5-nitroso-N-acetylpenicilamine (SNAP), a potential method to prevent thrombosis and infection in long-term catheter implantation in freely moving animals
Yaqi Wo, Chemistry, University of Michigan, Ann Arbor, MI, United States
- 10:15 304.2 ACL replacement using a decellularised xenograft tendon
Gordon W Blunn, Institute of Orthopaedics, University College London, London, United Kingdom
- 10:30 304.3 The mechanism for early promotion of guided bone regeneration with strontium-doped hydroxyapatite bone substitute involves a reduction of osteoclasts and osteoblast-osteoclast coupling processes
Ibrahim Ibrahim Elgali, Department of Biomaterials, Institute of Clinical Sciences at Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden
- 10:45 304.4 In vivo tissue integration and healing stiffness of woven collagen meshes: comparison to porcine dermis and polypropylene
Ozan Akkus, Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH, United States
- 11:00 304.5 Biocompatibility of bone allograft toughened with a novel irradiation-driven sterilization method for large segmental defects: an in vivo rabbit study
Sam Si-Hyeong Park, Orthopaedic Surgery, University of Toronto, Toronto, ON, Canada
- 11:15 304.6 Characterization of stability and inflammatory response to alginate encapsulated islets in the omentum pouch model
Veronica Ibarra, Illinois Institute of Technology, Chicago, IL, United States
- 11:30 304.7 Development of a novel bioresorbable bone substitute with a unidirectional porous structure
Takashi Matsuo, Biomaterial Department, Medical Division, Kuraray Co., Ltd., Kurashiki, Japan
- 11:45 304.8 Chitosan microspheres can fight *Helicobacter pylori* gastric infection in mice
Inês C Gonçalves, Instituto de Engenharia Biomédica (INEB), Porto, Portugal
- 12:00 304.9 Biomimetic aggrecan molecularly engineers articular cartilage following intra-articular injection in an OA rabbit model in vivo: a pilot study
Evan R Phillips, Materials Science, Drexel University, Philadelphia, PA, United States
- 12:15 304.10 Site-specific gene expression analysis of implant-near cells in a soft tissue infection model - application of laser microdissection to study biomaterial-associated infection and inflammation
Sara Svensson, Department of Biomaterial, Institute of Clinical Sciences, Gothenburg, Sweden

10:00 - 12:00

516a

306 - New Frontiers Symposium

Nanobiomaterials and nanotechnology for implants, devices, and theranostics

Sponsored By: 

Chairs: *Lei Yang, Orthopaedic Institute, Soochow University, Suzhou, P.R. China*
Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal

- 10:00 306.1 Folic acid conjugated amine functionalized cerium oxide nanoparticle for cancer targeted gene therapy
Shlipa Sant, Pharmaceutical Science and Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- 10:15 306.2 Phenylboronic acid functionalized methylcellulose based nanogels as mucoadhesive ocular drug delivery system
Frances Lasowski II, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- 10:30 306.3 Enhanced photodynamic therapy efficacy by encapsulation of photosensitizers in tyrosine-derived nanospheres
Tayana M Tsubone, Instituto de Química, Universidade de São Paulo, São Paulo, Brazil
- 10:45 306.4 A new bio-inspired delivery platform to overcome blood brain barrier
Daniela Guarnieri, Istituto Italiano di Tecnologia, Napoli, Italy
- 11:00 306.5 Optimization of the nano-thick amorphous oxide layer produced by plasma on SS316L to improve the corrosion characteristics in biological environment
Mahrokh Dorri, Materials and Metallurgy Department, Laval University, Quebec, QC, Canada
- 11:15 306.6 Growth and differentiation factor 5 (GDF-5)-functionalized, nanostructured titanium surfaces: in vitro and in vivo studies
Paulo Tambasco de Oliveira, Department of Morphology, University of São Paulo, Ribeirão Preto, Brazil
- 11:30 306.7 Discerning bone tissue engineered construct quality through concurrent metabolite monitoring, imaging techniques, and dynamic simulations
Vassilios Sikavitsas, Chemical, Biological, and Materials Engineering, University of Oklahoma, Norman, OK, United States
- 11:45 306.8 Materials and processings for stretchable bioelectronics systems
Hyun-Joong Chung, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada

10:00 - 12:30

516c

307 - General Session

Synthetic scaffolds as extracellular matrices

Chairs: Elzbieta Pamula, Department of Biomaterials, AGH University of Science and Technology, Kraków, Poland
Sanjeeva Murthy, New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, United States

- 10:00 307.1 Nanocomposite silica-polycaprolactone fibrous membranes for guided bone regeneration
Antonio Castro, Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands
- 10:15 307.2 Focal adhesion composition during attachment to electrospun nanofibers of varying diameters
Daniel T Bowers, Biomedical Engineering, Penn State University, University Park, PA, United States
- 10:30 307.3 Microporous scaffolds with bioactive signals for bone tissue regeneration
Christian Demitri, Department of Engineering for Innovation, University of Salento, Lecce, Italy
- 10:45 307.4 A hydrogel platform to understand breast cancer metastasis to the bone marrow
Lauren E Jansen, Chemical Engineering, University of Massachusetts Amherst, Amherst, MA, United States
- 11:00 307.5 3D printing of bone tissue engineering scaffolds with osteoconductivity and osteoinductivity
Min Wang, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- 11:15 307.6 Calcium release ormoglass: a new instructive interface for bone regeneration
Joan Martí Muñoz, Biomaterials for Regenerative Therapies, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain
- 11:30 307.7 A comparative study of enzyme initiators in a hydrogel cell encapsulation system
Penny J Martens, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia
- 11:45 307.8 A mechanically robust injectable hydrogel scaffold for adipose-derived stem cell delivery for the treatment of peripheral arterial disease
Stuart A Young, Department of Chemical Engineering, Queen's University, Kingston, ON, Canada
- 12:00 307.9 Tuning gelation kinetics and mechanical properties of a synthetic extracellular matrix substitute
Manuel B Schweikle, Department of Biomaterials, University of Oslo, Oslo, Norway
- 12:15 307.10 Biomimetic hydroxyapatite-containing PLLA/PCL electrospun nanofibrous scaffold for bone tissue engineering
Hongfei Qi, Key Laboratory for Space Bioscience and Biotechnology, School of Life Sciences, Northwestern Polytechnical University, Xi'an, P.R. China

10:00 - 12:30

517a

308 - New Frontiers Symposium

Bioinspired materials and devices for regenerative medicine

Sponsored By:



Chairs: Manuel Salmeron-Sanchez, School of Engineering, University of Glasgow, Glasgow, United Kingdom
Amaia Cipitria, Julius Wolff Institute, University of Berlin, Berlin, Germany

- 10:00 308.1 Novel molecular printing method to create complex 3D hydrogels with precise molecular composition
Juan Pablo Aguilar, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- 10:15 308.2 Biological response of human articular chondrocytes to shear loading following changes to hydrogel surface properties
Travis J Klein, Institute of Health and Biomedical Innovation, Queensland University of Technology, Kelvin Grove, Australia
- 10:30 308.3 Peptide-directed spatial organization of bioactivity in scaffolds for multifunctional tissue regeneration
Lesley W Chow, Materials Science and Engineering, Lehigh University, Bethlehem, PA, United States
- 10:45 308.4 Silica nano-carrier as a sustained delivery system of GDF5 for intervertebral disc regenerative medicine
Nina Henry, Le Laboratoire d'Ingénierie Ostéo-Articulaire et Dentaire, Institut National de la Santé et de la Recherche Médicale, Nantes, France
- 11:00 308.5 Mesoscopically ordered bone mimetic nanocomposites
Martin Andersson, Chemistry and Chemical Engineering, Chalmers University of Technology, Gothenburg, Sweden
- 11:15 308.6 Bio-inspired composite hydrogels for musculoskeletal regenerative engineering
Liangju Kuang, Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, IN, United States
- 11:30 308.7 Decoration of RGD-mimetic porous scaffold with engineered, devitalized adipose matrix
Eleonora Rossi, Institute for Surgical Research and Hospital Management, University Hospital of Basel, Basel, Switzerland
- 11:45 308.8 Curcumin-loaded cellulosic hydrogels for soft tissue reconstruction
Gittel T Gold, Biomedical Engineering, The City College of New York (CUNY), Brooklyn, NY, United States
- 12:00 308.9 First ever solid state crosslinking of hydrogel precursors: opening up unprecedented hydrogel processing avenues in the biomedical field
Annemie Houben, Polymer Chemistry and Biomaterials Research Group, Ghent University, Gent, Belgium
- 12:15 308.10 Development and characterization of Cold-Sprayed non-doped and silver doped carbonated biomimetic nanocrystalline apatites: application to TA6V medical implants
David Grossin, Centre de Recherche CIRIMAT, University of Toulouse, Toulouse, France

10:00 - 12:00

518

309 - General Session

Biomaterials for control of tissue induction

Chairs: Gregory De Crescenzo, Chemical Engineering, École Polytechnique de Montréal, Montréal, QC, Canada
 Maria Chatziniakolaidou, Materials Science and Technology, University of Crete, Heraklio, Greece

- 10:00 309.1 Chitosan-platelet-rich plasma implants for tissue repair - in vitro and in vivo characteristics
Gabrielle Depres-Tremblay, Biomedical engineering, Polytechnique de Montreal, Montreal, QC, Canada
- 10:15 309.2 Electroconductive hydrogel based on bacterial cellulose for 2D and 3D cell culture
Guang Yang, College of Science & Technology, Huazhong University of Science & Technology, Wuhan, P.R. China
- 10:30 309.3 MMPs inhibition as molecular approach to abdominal aortic aneurysm (AAA) treatment
Martina Ramella, Health Science Department, Università del Piemonte Orientale, Novara, Italy
- 10:45 309.4 Research on a novel fish collagen as a Guided Bone Regeneration membrane
Gang Zhou, Beihang University, Beijing, P.R. China
- 11:00 309.5 Using the embryonic heart as an instructive template for cardiac tissue engineering
Adam W Feinberg, Biomedical Engineering, Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- 11:15 309.6 Biomedical materials modified with the Angiopoietin-1-derived peptide QHREDGS induce osteoblast differentiation, bone matrix deposition and mineralization
Nicole T Feric, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 11:30 309.7 How the source and carrier affect BMP activity: INFUSE vs. the Cowell BMP implant
Aileen J Zhou, Oral and Maxillofacial Surgery, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada
- 11:45 309.8 Enhancing bone healing/regeneration by matrix-assisted MSC recruitment
Martin Ehrbar, Obstetrics, University of Zurich, Zurich, Switzerland

10:00 - 12:00

519

310 - General Session

Biodegradable polymers

Chairs: Angela M Moraes, School of Chemical Engineering/Department of Engineering of Materials and of Bioprocesses, University of Campinas (UNICAMP), Campinas, Brazil
 Changyou Gao, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China

- 10:00 310.1 Amphiphilic core cross-linked star polymers as key building blocks of the hydrogels with hydrophobic domains for drug delivery
Dunyin Gu, Department of Chemical and Biomolecular Engineering, University of Melbourne, Melbourne, Australia
- 10:15 310.2 A straightforward route to aliphatic poly(esters) with pendant RGD groups: from monomer design to porous scaffolds
Daniela Pappalardo, Fiber and Polymer Technology, KTH, Royal Institute of Technology, Stockholm, Sweden
- 10:30 310.3 Synthesis and characterization of a conductive, biodegradable polyurethane elastomer
Yi Hong, University of Texas at Arlington, Arlington, TX, United States
- 10:45 310.4 Biodegradable vinyl polymers synthesized by nitroxide-mediated radical ring-opening polymerization, for biomedical applications
Vianney Delplace, Chemical Engineering & Applied Chemistry, University of Toronto, Toronto, ON, Canada
- 11:00 310.5 Enzymatically catalyzed poly(butylene succinate)(PBS) copolymers as building blocks for degradable scaffolds
Mirosława El Fray, Biomaterials and Microbiological Technologies, West Pomeranian University of Technology, Szczecin, Szczecin, Poland
- 11:15 310.6 The Role of Geometry and Molecular Weight in 3D printed poly(propylene fumarate) scaffold resorption kinetics
Jason M Walker, Plastic Surgery, The Ohio State University, Columbus, OH, United States
- 11:30 310.7 Synthesis and characterization of fluorine-substituted polylactides/glycolides
Razieh Khalifehzadeh, Chemical Engineering, University of Washington, Seattle, WA, United States
- 11:45 310.8 Degradation and inflammatory response of poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) under physiological conditions
Satoshi Fujita, Graduate School of Engineering, University of Fukui, Fukui, Japan

10:00 - 12:15

520b

311 - General Session Biomaterials in dental applications

Chairs: Naresh Bhatnagar, Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi, India
Antonio Graziano, Executive Office, HBW srl, Torino, Italy

- 10:00 311.1 Real time aging of dental zirconia: in vitro behavior and clinical implications
Isabelle Denry, College of Dentistry, University of Iowa, Iowa City, IA, United States
- 10:15 311.2 Synthesis and biodegradation of di-vinyl monomers containing different antimicrobial agents for use in dental adhesive systems
Yasaman Delaviz, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 10:30 311.3 Fatigue testing and finite elements simulation of a new design of dental implants
Naresh Bhatnagar, Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi, India
- 10:45 311.4 Reconstituted keratin biomaterial potential for pulp-dentine regeneration
Azam Ali, Department of Applied Sciences, University of Otago, Dunedin, New Zealand
- 11:00 311.5 H2O2-TiO2-UV as potential treatment for peri-implantitis - an in vitro study
David Wiedmer, Department of Biomaterials, Oslo, Norway
- 11:15 311.6 Mechanical properties of newly formed bone around subperiosteal devices evaluated with micro-indentation test
Masayoshi Uezono, Department of Maxillofacial Orthognathics, Graduate School of Tokyo Medical and Dental University, Tokyo, Japan
- 11:30 311.7 Phenogenomics of the gingival fibroblast interaction with implant materials- a standardized system to determine material/surface potential for connective tissue attachment
Gethin R Owen, Oral, Biological and Clinical Science, University of British Columbia, Vancouver, BC, Canada
- 11:45 311.8 Study of antibacterial performance of Mg-Cu alloy on Porphyromonas gingivalis
Peng Wan, Institute of Metal Research, CAS, Shenyang, P.R. China
- 12:00 311.9 Dreamer: an innovative bone filler paste for the treatment of periodontitis
Giorgio Iviglia, Research & Development, Department of Applied Science and Technology (DISAT), Nobil bio ricerche - Politecnico di Torino, Torino, Italy

10:00 - 12:30

520c

312 - New Frontiers Symposium Calcium phosphate mineralization and maturation for biomaterials

Chairs: Osamu Suzuki, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan
Christian Rey, CIRIMAT, National Polytechnique Institute of Toulouse, University of Toulouse, Toulouse, France

- 10:00 312.1 Mineral formation pathways in bone
Steve Weiner, Structural Biology, Weizmann Institute of Science, Rehovot, Israel
- 10:30 312.2 Tools for characterizing the evolution of nanocrystalline apatites
Christian Rey, CIRIMAT, National Polytechnique Institute of Toulouse, University of Toulouse, Toulouse, France
- 10:45 312.3 Effect of gelatin molecules on the structural characteristics during precipitation and hydrolysis of octacalcium phosphate and the bioactivity of the composite
Osamu Suzuki, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan
- 11:00 312.4 Mitogenic activity of FGF-2 in FGF-2-apatite composite layers formed on titanium-based substrates with different surface chemistry
Kengo Fujii, Control of Musculoskeletal System, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Tsukuba, Japan
- 11:15 312.5 Functionalized hydroxyapatite with anti-oxidant and bone repair properties
Adriana Bigi, Department of Chemistry, University of Bologna, Bologna, Italy
- 11:30 312.6 Biomimetic apatite induced by various surface treatments and its role for a drug reservoir
In-Seop Lee, Institute of Natural Sciences, Yonsei University, Seoul, Korea
- 11:45 312.7 A new method for developing bone tissue, using a tissue-engineered fracture repair model
Alexandra Iordachescu, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- 12:00 312.8 Real time measurement of bioactive glass transformation and calcium phosphate precipitation using a quartz crystal microbalance
Shaz Y Khan, Innovation, GlaxoSmithKline, Weybridge, United Kingdom
- 12:15 312.9 Biomimetic mineralization of synthetic collagen-like peptide: a bottom-up approach to design advanced nanocomposite scaffolds for tissue engineering
Gloria Belen Ramirez Rodriguez, Institute of Science and Technology for Ceramics, Faenza, Italy

10:00 - 12:15

524

313 - New Frontiers Symposium

Injectable biomaterials for cell therapy and tissue engineering

Chairs: **Sophie Lerouge**, Mechanical Engineering, École de Technologie Supérieure, Montreal, QC, Canada
Antonios G Mikos, Department of Bioengineering, Rice University, Houston, TX, United States

- | | | |
|-------|-------|--|
| 10:00 | 313.1 | Injectable hydrogels for growth factor and stem cell delivery in tissue engineering
Antonios G Mikos , Department of Bioengineering, Rice University, Houston, TX, United States |
| 10:30 | 313.2 | Matrix assisted transplantation of functional beige adipose tissue
Kevin Tharp , UC Berkeley, Berkeley, CA, United States |
| 10:45 | 313.3 | Injectable hyaluronic acid bionanocomposite hydrogels: from biomaterial development to biological performance outcomes
Rui MA Domingues , 3B's Research Group, Guimarães, Portugal |
| 11:00 | 313.4 | Optimization of injectable scaffolds with enhanced mechanical properties for cell therapy and tissue engineering
Sophie Lerouge , Mechanical Engineering, École de Technologie Supérieure, Montreal, QC, Canada |
| 11:15 | 313.5 | Osteogenic differentiation of human mesenchymal stem cells in hydroxyapatite loaded thermally triggered, injectable hydrogel scaffolds to promote repair and regeneration of bone defects.
Chris Sammon , Materials and Engineering Research Institute, Sheffield Hallam University, Sheffield, United Kingdom |
| 11:30 | 313.6 | Injectable, magneto-responsive hydrogels for in situ physical actuation of osteochondral tissue regeneration
Adam Ekenseair , Chemical Engineering, Northeastern University, Boston, MA, United States |
| 11:45 | 313.7 | Injectable photocrosslinkable hyaluronic acid hydrogels incorporated with platelet lysate enhance the dentinogenic differentiation of human dental pulp stem cells
Manuela E Gomes , 3B's Research Group / University of Minho, Guimaraes, Portugal |
| 12:00 | 313.8 | Injectable chitosan thermogels adapted for cytotoxic T lymphocytes immunotherapy
Caroline Ceccaldi , École de Technologie Supérieure, Montréal, QC, Canada |

12:00 - 14:00

Lunch, Exhibits, Poster Viewing

12:30 - 13:30

512

314 - Lunch & Learn Sessions (sold out)

- | | |
|--------|--|
| 314.1 | A hybrid industry/academic career in biomaterials
Arthur J Coury , Chemical Engineering, Northeastern University, Boston, MA, United States N/A |
| 314.2 | Bio-interfaces: outlook and prospects
J Paul Santerre , Faculty of Dentistry, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada N/A |
| 314.3 | Biology inspired polymer design & public engagement
Molly S Shoichet , Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada N/A |
| 314.4 | Biomaterials for biopharmaceutical delivery
Yong-Hee Kim , Department of Bioengineering, Hanyang University, Seoul, Korea N/A |
| 314.5 | Biomaterials research in Australia
Thilak Gunatillake , Biomedical Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia N/A |
| 314.6 | Host response to biomaterials
Julie Babensee , Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States N/A |
| 314.7 | Cell inducing biomaterials and future of tissue engineering
Jiang Chang , Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China N/A |
| 314.8 | Educating biomaterials scientists
Buddy D Ratner , Engineered Biomaterials (UWEB), University of Washington, Seattle, WA, United States N/A |
| 314.9 | Evolution of biomaterials science and artificial organs
Chandra P Sharma , Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum, India N/A |
| 314.10 | Evolution of the concept of biocompatibility of materials in the era of nanotechnologies
Antonietta M Gatti , ISTECC, National Council of Research of Italy, San Vito, Italy N/A |
| 314.11 | Future of biomaterials research
David Mooney , Harvard University, Cambridge, MA, United States N/A |
| 314.12 | Future of metallic biomaterials
Takao Hanawa , Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan N/A |
| 314.13 | High caliber publications
William Wagner , McGowan Institute for Regenerative Medicine, Pittsburgh, PA, United States N/A |
| 314.14 | Innovation in biomaterials for regenerative medicine
Lynn LH Huang , Institutes of Biotechnology & Clinical Medicine, National Cheng Kung University, Tainan, Taiwan N/A |
| 314.15 | International sabbaticals
Michael Detamore , Chemical & Petroleum Engineering, University of Kansas, Lawrence, KS, United States N/A |
| 314.16 | Learning lessons from developmental biology and translating them to biomaterials science
Abhay Pandit , Center for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland N/A |

DETAILED PROGRAM

FRIDAY, MAY 20, 2016

- 314.17 Maxillofacial rehabilitation and regeneration: trials and tribulations
Lucy Di Silvio, Tissue Engineering & Biophotonics, King's College London, London, United Kingdom N/A
- 314.18 Mentorship in academic career
Pamela Habibovic, Instructive Biomaterials Engineering, Maastricht University, Maastricht, Netherlands N/A
- 314.19 Nanotechnology in medicine
Kazunori Kataoka, Materials Engineering, The University of Tokyo, Tokyo, Japan N/A
- 314.20 Starting a competitive academic lab
Helena S Azevedo, School of Engineering & Materials Science, Queen Mary University of London, London, United Kingdom N/A
- 314.21 The academic job hunt: searching and preparing for an academic position
Corinne A Hoesli, Department of Chemical Engineering, McGill University, Montréal, QC, Canada N/A
- 314.22 Tissue engineering in clinics
Yilin Cao, Department of Plastic and Reconstructive Surgery, Shanghai 9th People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, P.R. China N/A
- 314.23 Recent advances in biomineralization
David H Kohn, Biologic and Materials Sciences, University of Michigan, Ann Arbor, MI, United States N/A
- 314.24 Building artificial organs by modular design
Michael V Sefton, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada N/A
- 314.47 Careers for researchers in publishing industry
Marina Soares E Silva, Materials Science Journals, Elsevier, Amsterdam, Netherlands N/A

12:15 - 15:30 517a

315 - Technical Forum

Translational science of lactide-based resorbable polymers: from lab to commercial application

Hosted and Sponsored By:  Corbion Purac

- 315.1 Considerations when developing absorbable medical devices
Dennis D Jamiolkowski, Corbion Purac, Gorinchem, Netherlands N/A
- 315.2 Resorbable polymers in vascular scaffolds
Jim Oberhauser, Corbion Purac, Gorinchem, Netherlands N/A
- 315.3 A high-strength, fully-absorbable material for orthopaedic implants
Shawn Peniston, Corbion Purac, Gorinchem, Netherlands N/A
- 315.4 BEPO™ long-acting injectable drug delivery technology platform
Audrey Petit, Corbion Purac, Gorinchem, Netherlands N/A
- 315.5 Resorbable polymers in tissue engineering applications
Swee Hin Teoh, Corbion Purac, Gorinchem, Netherlands N/A

12:30 - 14:00 513def

Affiliated Meeting

SFB Annual Business Meeting - open to members

12:35 - 13:50 515

Affiliated Meeting

SFB National Student Chapter Meeting - open to student members

13:30 - 16:00 514a

Affiliated Meeting

Elsevier Board Meeting: Biomaterials Journal (by invitation only)

14:00 - 15:00 510a

316 - General Session

Layer-by-layer deposition and self-assembly

Chair: *Lisbeth Grondahl, School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Australia*

- 14:00 316.1 Additive manufacturing of fibrous sub-micron poly(ϵ -caprolactone) scaffolds for tissue engineering
Gernot Hochleitner, Department for functional materials in medicine and dentistry, University of Würzburg, Würzburg, Germany
- 14:15 316.2 Fabrication of nanocomposite-coated foam with tailored structure and mechanical properties using layer-by-layer assembly for tissue engineered bone scaffold applications
Monika Ziminska, Mechanical & Aerospace Engineering, Queen's University Belfast, Belfast, United Kingdom
- 14:30 316.3 Layer-on-layer assembly of macroscopic carbon nanomaterial coatings for tissue engineering applications
Balaji Sitharaman, Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States
- 14:45 316.4 Improvements in the self-assembly technique to produce stromas
Weronika Jakubowska, Tissue Engineering and Regenerative Medicine, Laboratoire d'Organogenèse Expérimentale, Québec, QC, Canada

14:00 - 15:00

510b

317 - General Session

Adhesive biomaterials

Chairs: *Eli D Sone, Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada*
Karen Burg, Small Animal Medicine & Surgery, University of Georgia, Athens, GA, United States

- 14:00 317.1 Enhanced tissue adhesiveness of injectable gelatin-based hydrogels using thiomers
Thai Thanh Hoang Thi, Ajou University, Suwon, Korea
- 14:15 317.2 Choline phosphate functionalized cellulose membrane developed as potential hemostasis dressing based on a unique bioadhesion mechanism
Xiaoqiang Yang, Department of Pathology, University of British Columbia, Vancouver, BC, Canada
- 14:30 317.3 Synthesis and mucin binding to silicone boronic acid elastomers
Benjamin J Macphail, McMaster University, Hamilton, ON, Canada
- 14:45 317.4 Microfluidic spinning of fibronectin fibers via silk-induced cross-linking
Matthew M Jacobsen, Department of Biomedical Engineering, Boston University, Boston, MA, United States

14:00 - 15:00

511e

318 - General Session

Tissue targeting nanoparticles

Chairs: *Michael D Buschmann, Chemical Engineering, Polytechnique Montreal, Montreal, QC, Canada*
Simone Sprio, Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy

- 14:00 318.1 Tumor-targeted biopolymer capped mesoporous silica nanocarriers for intracellular acid-triggered drug release
Montserrat Colilla, Departamento de Química Inorgánica y Bioinorgánica, Facultad de Farmacia, Universidad Complutense de Madrid and CIBER-BBN, Madrid, Spain
- 14:15 318.2 Targeted nanoparticle delivery of a highly toxic metal chelator to brain tumors
Sheereen Majd, University of Houston, Houston, TX, United States
- 14:30 318.3 Two-stage lymph node drug delivery system based on differential rates of oxanorbornadiene-mediated drug tethering and release from thiolated nanoparticles
Alex Schudel, Georgia Institute of Technology, Atlanta, GA, United States
- 14:45 318.4 One pot in situ synthesis of radioactive gold 198 nanoparticle encapsulated by albumin for application in cancer theranostics
Ademar B Lugao, Center for Chemistry and Environmental Research, Instituto de Pesquisas Energéticas e Nucleares (IPEN), São Paulo, Brazil

14:00 - 15:00

511f

319 - General Session

Role of biomaterials in inflammation

Chairs: *Rosalind Labow, Biochemistry, University of Ottawa, Ottawa, ON, Canada*
Yukio Nagasaki, Materials Science and Medical Sciences, University of Tsukuba, Tsukuba, Japan

- 14:00 319.1 Monocyte recruitment to polymer implants regulates the in situ generation of macrophages and vascular remodeling
Claire E Segar, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- 14:15 319.2 Collagen cross-linking increases scaffold stability while modulates pro-inflammatory macrophage response
Manus Biggs, NUI Galway, Galway, Ireland
- 14:30 319.3 ROS sensitive collagen fibers with gradient concentration of MnO₂ nanoparticles inhibit annulus fibrosus cell apoptosis.
Christos Tapeinos, Center for Research in Medical Devices, National University of Ireland Galway, Galway, Ireland
- 14:45 319.4 Human macrophages release higher IL-1ra over IL-1beta when stimulated by block acetylated chitosan microparticles and not by random acetylated chitosans or water-soluble oligomers
David Fong, Institute of Biomedical Engineering, École Polytechnique de Montreal, Montreal, QC, Canada

14:00 - 15:00

515

320 - New Frontiers Symposium

Standardization in evaluations of biodegradable metals

Chairs: *Diego Mantovani, Lab Biomaterials & Bioengineering, Laval University, Quebec, Canada*
Frank Witte, Julius Wolff Institute and Berlin-Brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany

- 14:00 320.1 The use of multiple pseudo-physiological solutions to simulate degradation behavior of pure Fe: towards a standard static immersion test
Ranna Tolouei, Laval University, Quebec, QC, Canada
- 14:15 320.2 Extract medium selection for biocompatibility and degradable behavior evaluation of magnesium and its alloys in vitro
Lina Wei, Shenzhen Institute, Peking University, Shenzhen, P.R. China
- 14:30 320.3 Towards standardization: influence of CO₂ rich atmosphere on degradation behavior of Fe-Mn-C alloy
Essouè Mouzou, Genie Matériaux et Métallurgie, Laval University, Québec, QC, Canada
- 14:45 320.4 Comparison of magnesium versus poly(lactide-co-glycolide) resorbable plates and screws using a new porcine maxillofacial fracture fixation model, a pilot study
Benoit Schaller, Department of Cranio-Maxillofacial Surgery, Inselspital Bern, University Hospital, Bern, Switzerland

14:00 - 15:00

516a

321 - General Session

Ceramics

Chairs: Harikrishna PR Varma, Bioceramics Laboratory, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India
Luís Alberto Loureiro Dos Santos, Engineering Materials Department, Federal University of Rio Grande do sul, Porto Alegre, Brazil

- 14:00 321.1 Development of a new osteoconductive bone wax
Theresa Brückner, Department for Functional Materials in Medicine and Dentistry, University of Würzburg, Würzburg, Germany
- 14:15 321.2 Surrogate outcome measures of in vitro osteoclast resorption of calcium phosphate ceramics
Susan A Clarke, School of Nursing and Midwifery, Queen's University Belfast, Belfast, United Kingdom
- 14:30 321.3 Novel multiphasic calcium phosphate cements with enhanced degradative properties
Caroline Öhman Mägi, Department of Engineering Sciences, Uppsala University, Uppsala, Sweden
- 14:45 321.4 Calcium phosphate hollow spheres: carriers and repair
Wei Xia, Uppsala University, Uppsala, Sweden

14:00 - 15:00

516c

322 - New Frontiers Symposium

Biomaterials as stem cell microenvironments

Chairs: Andrew E Rodda, Department of Materials Engineering, Monash University, Clayton, Australia
Peter X Ma, University of Michigan, Ann Arbor, MI, United States

- 14:00 322.1 Grafted electrospun fibers via SI-ATRP that mediate adhesion via attached molecules while reducing non-specific adhesion
Andrew E Rodda, Department of Materials Engineering, Monash University, Clayton, Australia
- 14:15 322.2 Functional zwitterionic hydrogels immobilization on stainless steel to deliver vascular endothelial growth factors for enhanced mesenchymal stem cells adhesion
Lai Wei, Southwest Jiaotong University, Chengdu, P.R. China
- 14:30 322.3 Functionalized scaffolds for tissue engineering
Eman Alfayez, Tissue Engineering and Biophotonics, King's College London, London, United Kingdom
- 14:45 322.4 PCL-SF/HA/GRGD cardiac patches promoting micromass formations and cardiomyogenesis of hBMSC
Hsin-Yu Lo, Biomedical engineering, National Yang-Ming University, Taipei, Taiwan

14:00 - 15:00

518

323 - General Session

Biomaterials for control of tissue induction

Chairs: Rui Reis, University of Minho - 3B's Research Group, University of Minho, Guimarães, Portugal
Lynn LH Huang, Institutes of Biotechnology & Clinical Medicine, National Cheng Kung University, Tainan, Taiwan

- 14:00 323.1 Chitosan-platelet-rich plasma implants can be injected into meniscus tears to improve repair
Anik Chevrier, Chemical Engineering Department, Polytechnique Montreal, Montreal, QC, Canada
- 14:15 323.2 Glypisomes, a novel construct for enhancing angiogenic response to delivered growth factors
Anthony J Monteforte IV, Biomedical Engineering, University of Texas, Austin, TX, United States
- 14:30 323.3 Growth factor releasing micro strands promoted in vitro angiogenesis
Houman Savoji, Institute of Biomedical Engineering, Ecole Polytechnique of Montreal, Montreal, QC, Canada
- 323.4 Functionalization of titanium implant surface for improving osteointegration
Adele Carradò, Institut de Physique et Chimie des Matériaux, Université de Strasbourg, Strasbourg, France

14:00 - 15:00

519

324 - General Session

Biomaterials in nerve regeneration

Chairs: Stephanie Willerth, Mechanical Engineering/Medical Engineering, University of Victoria, Victoria, BC, Canada
Xiumei Mo, Donghua University, Shanghai, P.R. China

- 14:00 324.1 Optimizing the design of synthetic peripheral nerve conduits
Joachim B Kohn, New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, United States
- 14:30 324.2 Local application of LNA-based antisense oligonucleotides in a strategy for spinal cord injury treatment
Pedro M Moreno, Institute of Biomedical Engineering (INEB), Institute for Research and Innovation in Health (i3S), Porto, Portugal
- 14:45 324.3 Polymeric micelle delivery system for combinatorial therapy after traumatic brain injury
Christian P Macks, Department of Bioengineering, Clemson University, Clemson, SC, United States

14:00 - 15:00 520b

325 - General Session Biomaterials in dental applications

Chairs: Maksym V Pogorelov, Medical Institute, Sumy State University, Sumy, Ukraine
Xinquan Jiang, Prosthodontics, Shanghai Ninth People's Hospital, Shanghai JiaoTong University School of Medicine, Shanghai, P.R. China

- 14:00 325.1 Biodegradation and protein adhesion on novel fluorinated-urethane based di-vinyl monomers for dental applications
Meilin Yang, University of Toronto, Mississauga, ON, Canada
- 14:15 325.2 Manufacturability of custom endosteal dental implants by selective laser melting
Jerome Lafreniere, V2R Biomedical Inc., Montreal, QC, Canada
- 14:30 325.3 Effects of surface roughness on the stress and performance of titanium dental implants
Manish Chaturvedi, Department of Mechanical, Indian Institute of Technology Delhi, New Delhi, India
- 14:45 325.4 Impact of Er:YAG laser ablation on the interfacial properties of a hydrophilic fissure sealant
Nichola J Coleman, Faculty of Engineering and Science, University of Greenwich, Kent, United Kingdom

14:00 - 15:00 520c

326 - General Session Nanotopography of biomaterials

Chairs: Lucy Di Silvio, Tissue Engineering & Biophotonics, King's College London, London, United Kingdom
Buddy D Ratner, Engineered Biomaterials (UWEB), University of Washington, Seattle, WA, United States

- 14:00 326.1 Fibroblast cells align on wrinkled polyelectrolyte multilayers
Patrick T Mather, Syracuse Biomaterials Institute, Syracuse University, Syracuse, NY, United States
- 14:15 326.2 Impact of structure-dimensions on initial and short-term bacterial adhesion
Jens Friedrichs, Institute of Biofunctional Polymer Materials, Leibniz Institute of Polymer Research, Dresden, Germany
- 14:30 326.3 Titanium alloys nanostructured surfaces - from laboratory to implants
Jaroslav Fojt, Department of Metals and Corrosion Engineering, University of Chemistry and Technology, Prague, Czech Republic
- 14:45 326.4 Anodization of highly-ordered TiO₂ nanotubes-array using orthogonal design of experiments
Jiangxue Wang, School of Biological Science and Medical Engineering, Beihang University, Beijing, P.R. China

14:00 - 15:00 524

327 - New Frontiers Symposium Injectable biomaterials for cell therapy and tissue engineering

Chairs: Marta Cerruti, Mining and Materials Engineering, McGill University, Montreal, QC, Canada
Molly S Shoichet, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada

- 14:00 327.1 Optimizing material and flow properties of guest-host hydrogels for injectable cell delivery
Minna H Chen, University of Pennsylvania, Philadelphia, PA, United States
- 14:15 327.2 Injectable hydrogel for antioxidant therapy and cell encapsulation
Jayabalan Muthu, Polymer Division, Biomedical Technology Wing, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, India
- 14:30 327.3 Injectable and degradable poly(oligoethylene glycol methacrylate)-based hydrogels-synthetic versatility for improved biomaterial design
Emilia Bakaic, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- 14:45 327.4 Application of powdered reconstituteable liquid skin substitute for cell therapy
Aziz Ghahary, University of British Columbia, Vancouver, BC, Canada

14:00 - 16:00 525

Affiliated Meeting Japanese Society for Biomaterials (JSB) Annual General Meeting - open to members

15:00-16:30 220bcd

Poster Viewing Session 2A See page 200

15:00 - 17:00 513def

Affiliated Meeting Latin-American Society for Biomaterials (SLABO) Annual General Meeting - open to members

16:30 - 18:30

510a

329 - New Frontiers Symposium

Open-source and low-cost tools and technologies for advanced biomaterials fabrication

- Chairs:* Adam W Feinberg, Biomedical Engineering, Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
Jordan Miller, Rice University, Houston, TX, United States
-
- 16:30 329.1 Automating chemistry and materials synthesis, discovery and digitization with 3D-printers and 3D-printer-based robots
Lee Cronin, School of Chemistry, University of Glasgow, Glasgow, United Kingdom
-
- 17:00 329.2 Simple inner-surface modification of a PDMS microchip by radiation-induced graft polymerization for extracellular vesicle Detection toward Point-of-Care Cancer Diagnosis
Ryo Ishihara, Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan
-
- 17:15 329.3 3D printing complex scaffolds using Freeform Reversible Embedding of Suspended Hydrogels (FRESH)
Adam W Feinberg, Biomedical Engineering, Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
-
- 17:30 329.4 Self-assembling bio-inks for 3D printing of cellular constructs
Karen R Dubbin, Stanford University, Stanford, CA, United States
-
- 17:45 329.5 A novel perfusion bioreactor for the culture of large and anatomically accurate tissue scaffolds
David P Forrestal, Science and Engineering Faculty, Queensland University of Technology, Kelvin Grove, Australia
-
- 18:00 329.6 Direct 3D printing of shear-thinning hydrogels at high resolution using open-source technologies
Christopher B Highley, Bioengineering, University of Pennsylvania, Philadelphia, PA, United States
-
- 18:15 329.7 Stereolithography of engineered tissues containing interpenetrating vascular networks
Bagrat Grigoryan, Rice University, Houston, TX, United States

16:30 - 18:15

510b

330 - General Session

Nano-structured materials for unique functions

- Chairs:* Guping Tang, Institute of Chemical Biology and Pharmaceutical Chemistry, Zhejiang University, Hangzhou, P.R. China
Maria Asplund, Biomedical Microtechnology, University of Freiburg, Freiburg, Germany
-
- 16:30 330.1 Assembly of immune signals into carrier-free capsules for rationale vaccine design
Yu-Chieh Chiu, Fischell Department of Bioengineering, University of Maryland, College Park, MD, United States
-
- 16:45 330.2 Additively manufactured porous titanium with nanotubular surfaces containing anti-microbial agents
Harrie Weinans, Department of Orthopaedics, UMC Utrecht, Utrecht, Netherlands
-
- 17:00 330.3 A multifunctional antibacterial surface with switchable biocidal activity and bacteria-release capability
Qian Yu, College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou, P.R. China
-
- 17:15 330.4 Development and characterization of functionalized self-assembling nanopeptide on the effect of angiogenesis for injured brain tissue regeneration
Kai-Chieh Chang, Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan
-
- 17:30 330.5 Ionically cross-linked star block copolymer gel with high biocompatibility
Yoshiyuki Nakagawa, Department of Chemical System Engineering, The University of Tokyo, Tokyo, Japan
-
- 17:45 330.6 A novel functionalization of biomaterials: use of Ce valance states of cerium oxide nanoparticles to control cell proliferation
Tamaki Naganuma, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Ibaraki, Japan
-
- 18:00 330.7 Multifunctional mesoporous organosilica nanoparticles with high surface area for antibacterial applications
Nele Klinkenberg, University of Konstanz, Konstanz, Germany

16:30 - 18:30

511e

331 - New Frontiers Symposium Bioinspired materials and devices for regenerative medicine

Sponsored By:



- Chairs:* **Jose Luis Gomez Ribelles**, Centre for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Valencia, Spain
Zhe Annie Cheng, Biomedical Engineering, University of Glasgow, Glasgow, United Kingdom
-
- 16:30 331.1 The proteomic characterization of decellularized adipose tissue bioscaffolds for applications in soft tissue regeneration
Cody FC Brown, Anatomy and Cell Biology, University of Western Ontario, London, ON, Canada
-
- 16:45 331.2 Changes in collagen and sulphated proteoglycan synthesis by multilamellated AF tissues cultured in vitro on aligned nanofibrous polyurethane constructs under dynamic compressive loading
Jonathan lu, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
-
- 17:00 331.3 Polydopamine coating for developing biocompatible multifunctional coating for desirable surface modification of biomedical devices
Ying Yang, Southwest Jiaotong University, Chengdu, P.R. China
-
- 17:15 331.4 Matrix elasticity-dependent differentiation of annulus fibrous-derived stem cells
Caihong Zhu, Orthopedic Institute, Soochow University, Suzhou, P.R. China
-
- 17:30 331.5 Bacterial cellulose production using a novel microbe
Lina Fu, Western University, London, ON, Canada
-
- 17:45 331.6 Fabrication of gelatin-heparin hydrogels with enhanced chondrogenic differentiation and tunable degradation
Gabriella CJ Brown, Orthopaedic Surgery & Musculoskeletal Medicine, University of Otago, Christchurch, New Zealand
-
- 18:00 331.7 Investigating the effects of fibrin/collagen composite gels on macrophage phenotype polarization
Wendy Liu, Biomedical Engineering, University of California Irvine, Irvine, CA, United States
-
- 18:15 331.8 Stabilization of electrospun collagen scaffold for tympanic membrane perforations
Jian Liu, Department of Chemical and Biochemical Engineering, Western University, London, ON, Canada

16:30 - 18:15

511f

332 - General Session Drug-eluting devices

Chairs: **Takashi Miyata**, Department of Chemistry and Materials Engineering, Kansai University, Suita, Osaka, Japan
Jeffrey L Schwartz, W. L. Gore & Associates, Flagstaff, AZ, United States

- 16:30 332.1 Ocular drug release models: comparisons between in vitro cell, dynamic release, and fixed volume models
Saman Mohammadi, Systems Design Engineering, University of Waterloo, Waterloo, ON, Canada
-
- 16:45 332.2 Development of drug-eluting intraocular lens for improving post-cataract surgical complications
Li-Jyuan Luo, Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan
-
- 17:00 332.3 Construction of poly-dopamine coating with copper ion for controllable and sustained release of nitric oxide on the surface of cardiovascular implants
Qiufen Tu, Department of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
-
- 17:15 332.4 Electrically-responsive implants for drug delivery to the posterior segment of the eye
Darren Svirskis, Pharmacy, University of Auckland, Auckland, New Zealand
-
- 17:30 332.5 Targeting urothelial tumors of upper urinary tract with drug-eluting stents impregnated by supercritical fluids
Alexandre A Barros, Department of Polymer Engineering, 3Bs Research Group, University of Minho, Guimaraes, Portugal
-
- 17:45 332.6 Phenylboronic acid based polymeric micelles for mucoadhesive anterior segment ocular drug delivery.
Ben BB Muirhead, Biomedical Engineering, McMaster University, Hamilton, ON, Canada
-
- 18:00 332.7 A new class of biodegradable polyurethanes with PLGA moieties for sustained release of physicochemically diverse drugs from electrospun fibers with biologically relevant degradation rates
Anna K Blakney, Department of Bioengineering, University of Washington, Seattle, WA, United States

16:30 - 18:15

515

333 - New Frontiers Symposium

Biomedical imaging and theranostics: biomaterial design and applications

Chairs: **Yanglong Hou**, College of Engineering, Peking University, Beijing, P.R. China
Zhengrong Lu, Case Western Reserve University, Cleveland, OH, United States

- 16:30 333.1 Clinical imaging contrast agents: inception through lifecycle
Benjamin M Yeh, UCSF Department of Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States
- 17:00 333.2 Joint histogram analysis of histology and micro computed tomography to reveal the performance of bone-grafting materials
Bert Müller, Department of Biomedical Engineering, University of Basel, Allschwil, Switzerland
- 17:15 333.3 Image-guided surgery for tumor removal using hyaluronic acid-derived near infrared fluorescent nanoparticles.
Aaron M Mohs, Pharmaceutical Sciences, University of Nebraska Medical Center, Omaha, NE, United States
- 17:30 333.4 Stimuli-regulated cancer theranostics based on magnetic nanoparticles
Yanglong Hou, College of Engineering, Peking University, Beijing, P.R. China
- 17:45 333.5 Folic acid-modified Fe₃O₄@Au core/shell nanostars for multimode imaging and photothermal therapy of tumors
Xiangyang Y Shi, Bioengineering, Donghua University, Shanghai, P.R. China
- 18:00 333.6 Dendrimer-based sentinel lymph node imaging
Chie Kojima, Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, Sakai, Japan

16:30 - 18:30

516a

334 - New Frontiers Symposium

Recombinant proteins as emerging biomaterials

Chairs: **John AM Ramshaw**, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Parkville, Australia
Jerome A Werkmeister, CSIRO Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton South Victoria, Australia
Larry Unsworth, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada

- 16:30 334.1 Advances and challenges with fibrous protein biomaterial designs
David Kaplan, Biomedical Engineering, Tufts University, Medford, MA, United States
- 17:00 334.2 Recombinant honeybee silk proteins and their use in future materials
Tara D Sutherland, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Canberra, Australia
- 17:15 334.3 Development of novel non-animal collagen and gelatine materials
John AM Ramshaw, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Parkville, Australia
- 17:30 334.4 Development of bioactive hydrogel foams to accelerate healing of chronic wounds
Stacy N Cereceres, Biomedical Engineering, Texas A&M University, Houston, TX, United States
- 17:45 334.5 Accelerated wound repair and promoted angiogenesis in a tropoelastin α modified dermal regeneration template
Anthony S Weiss, University of Sydney, Sydney, Australia
- 18:00 334.6 3D and 2D human mesenchymal stem cells (hMSCs) spreading and proliferation in ECM-mimetic hydrogels based on elastin-like recombinamers
Arturo Ibáñez-Fonseca, University of Valladolid, Valladolid, Spain
- 18:15 334.7 Towards an elastin-based hydrogel platform for the repair of myocardial infarction
Paolo Contessotto, Centre for Research in Medical Devices (CÚRAM), School of Engineering and Informatics, National University of Ireland, Galway, Ireland

DETAILED PROGRAM

FRIDAY, MAY 20, 2016

16:30 - 18:15

516c

335 - General Session

Synthetic scaffolds as extracellular matrices

Chairs: Yusuf Khan, Orthopaedic Surgery, University of Connecticut Health Center, Farmington, CT, United States
Kyriakos M Spanoudes, SFI Centre for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland

- 16:30 335.1 Injectable poly(ethylene glycol) hydrogels cross-linked via the strain-promoted alkyne-azide cycloaddition reaction
Sabrina M Hodgson, McMaster University, Hamilton, ON, Canada
- 16:45 335.2 Guided subchondral bone marrow stimulation through a novel biomaterial microparticle approach
Caroline D Hoemann, Chemical Engineering, École Polytechnique, Montreal, QC, Canada
- 17:00 335.3 TGF- β 1 affinity peptides crosslinked with chitosan sponge promoted chondrogenesis of BMSCs
Yijiang Li, Peking University, Beijing, P.R. China
- 17:15 335.4 Synthesis of cooligopeptides and functionalized aliphatic polyesters by chemo-enzymatic synthesis
Anna Finne-Wistrand, Fibre and Polymer Technology, KTH Royal Institute of Technology, Stockholm, Sweden
- 17:30 335.5 Diels-Alder "click" crosslinked matrices within calcium alginate templated beads
Alison Stewart, Chemistry & Chemical Biology, McMaster University, Hamilton, ON, Canada
- 17:45 335.6 Bone regeneration hydrogels obtained via an accelerated, double-enzymatic mineralization
Marco Lopez, Controlled Drug Delivery Systems and Biomaterials, University of Lille 2, Lille, France
- 18:00 335.7 Examining fibroblast response to multiple microenvironment cues in culture models of varying complexity
Megan E Smithmyer, Chemical and Biomolecular Engineering, University of Delaware, Newark, DE, United States

16:30 - 18:30

517a

336 - Round Table Panel Discussion

Life-long learning

Sponsored By: 

Chairs: Maud Gorbet, Systems Design Engineering, University of Waterloo, Waterloo, ON, Canada
Penny J Martens, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia

- 336.1 Life-long learning
Christine E Schmidt, Biomedical Engineering, University of Florida, Gainesville, FL, United States N/A

- 336.2 Orchestra symphony of international collaborations in a rapidly changing world
Dietmar W. W Hutmacher, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia N/A
- 336.3 The evolving role of science, innovation and entrepreneurship at universities
Leonard Pinchuck, Miami, FL, United States N/A
- 336.4 Creating a pandemic of health: we need life-long unlearning to unleash the social transformative power of biomaterials
Alex Jadad, The Institute for Global Health Equity and Innovation, Centre for Global eHealth Innovation, Toronto, ON, Canada N/A

16:30 - 18:30

518

337 - New Frontiers Symposium

Biomaterial approaches to engineering the neural interface

Chairs: Manus Biggs, NUI Galway, Galway, Ireland
Xinyan Tracy Cui, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

- 16:30 337.1 Clinical aspects to engineering the neural interface
Kevin E Bennet, Division of Engineering, Mayo Clinic, Rochester, MN, United States
- 17:00 337.2 Functionalized PEDOT polymeric coatings for neuroelectrodes: topographical and biological strategies
Catalina Vallejo Giraldo, Centre for Research in Medical Devices (CÚRAM), National University of Ireland (NUIG), Galway, Ireland
- 17:15 337.3 A copolymer coating for improving bio-functionalization and reducing nonspecific biofouling on neural probes
Bin Cao, University of Pittsburgh, Pittsburgh, PA, United States
- 17:30 337.4 Carbon-based nanomaterials interfacing nerve cells emerge as a new family of synergic bio-hybrid systems
Denis Scaini, Department of Life Science, University of Trieste, Trieste, Italy
- 17:45 337.5 Performance of soft, brain-like neural implants in rodents in chronic experiments
Arati M Sridharan, Arizona State University, Tempe, AZ, United States
- 18:00 337.6 Developing 3D interfaces to aid nerve repair
Suzanne E Thomson, Centre for Cell Engineering University of Glasgow, University of Glasgow, Glasgow, United Kingdom
- 18:15 337.7 Design of a neural probe using localised cooling and long term delivery of anti-inflammatory factors to reduce glial scar formation and improve the chronic efficacy of therapeutic probes
Laura C Frey, Trinity Centre for Bioengineering, Trinity College Dublin, Dublin, Ireland

16:30 - 17:45

519

338 - New Frontiers Symposium Biomaterials as stem cell microenvironments

Chairs: Meghan Hall, University of Victoria, Victoria, BC, Canada
Silvia Panseri, Institute of Science and Technology for Ceramics,
National Research Council of Italy (ISTEC-CNR), Faenza, Italy

16:30 338.1 Using a mathematical model to investigate the growth and neuronal differentiation of human induced pluripotent stem cells seeded on engineered melt electrospun scaffolds
Meghan Hall, University of Victoria, Victoria, BC, Canada

16:45 338.2 Hydrogels as model scaffolds to induce 3-dimensional adipocyte culture from stem cells
Kristen Newman, University of Mississippi Medical Center, Jackson, MS, United States

17:00 338.3 Nanoscale pattern of steric hindrance in PEG copolymers improve potency of patient-derived human mesenchymal stem cells
Daniel A Balikov, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States

17:15 338.4 Crosslinking chemistry of tyramine-modified hyaluronan hydrogels alters mesenchymal stem cell attachment and behavior
Claudia Loebel, Musculoskeletal Regeneration, AO Research Institute, Davos-Platz, Switzerland

17:30 338.5 3D collagen-based microenvironment for neural stem cell culture to predict the in vivo cellular behavior
Silvia Panseri, Institute of Science and Technology for Ceramics, National Research Council of Italy (ISTEC-CNR), Faenza, Italy

16:30 - 18:30

520b

339 - Special Session ASBTE, CBS, CSBM and ESB Awards Session

Australasian Society for Biomaterials and Tissue Engineering Awards

ASBTE Research Excellence Award

Canadian Biomaterials Society (CBS) Awards

Service Award

J Paul Santerre, Faculty of Dentistry, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

339.1 Lifetime Achievement Award

Protein interactions at the biomaterial-tissue interface, the inescapable reality: understanding, preventing, controlling
John Brash, Biomedical Engineering, McMaster University, Hamilton, ON, Canada

339.2 Early Career Investigator Award

Engineering degradable "smart" biomedical hydrogels on multiple length scales
Todd Hoare, Chemical Engineering, McMaster University, Hamilton, ON, Canada

Chinese Society for Biomaterials (CSBM) Awards

Young Scientist Award

Yufeng Zheng
Zianzheng Zhang
Xingyu Jiang
Chengtie Wu

Outstanding Achievement Award

Yingjun Wang
Fuzhai Cui

Founders Award

Xingdong Zhang

European Society for Biomaterials (ESB) Awards

339.3 ESB International Award

Interesting biomaterials keep biomaterials interesting
Michael V Sefton, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada

16:30 - 18:30

520c

340 - New Frontiers Symposium

Calcium phosphate mineralization and maturation for biomaterials

*Chairs: Osamu Suzuki, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Sendai, Japan
Christian Rey, CIRIMAT, National Polytechnique Institute of Toulouse, University of Toulouse, Toulouse, France*

-
- 16:30 340.1 Cell-mediated mineralization of synthetic polyethylene glycol hydrogels to create bone tissue engineering constructs
Jennifer Patterson, Department of Materials Engineering, KU Leuven, Leuven, Belgium
-
- 16:45 340.2 Bioengineering of novel hierarchically-ordered apatite crystals for dental enamel regeneration
Sherif Elsharkawy, Institute of Bioengineering, London, United Kingdom
-
- 17:00 340.3 Hydrogen-substituted β -TCP synthesized in organic media
Christoph Staehli, RMS Foundation, Bettlach, Switzerland
-
- 17:15 340.4 Development of bioactive materials based on poly-gamma-glutamic acid
Toshiki Miyazaki, Kyushu Institute of Technology, Kitakyushu, Japan
-
- 17:30 340.5 Effect of hydroxyapatite materials properties on fibronectin-mediated breast cancer cell adhesion and pro-angiogenic secretion
Fei Wu, Materials Science and Engineering, Cornell University, Ithaca, NY, United States
-
- 17:45 340.6 Fabrication of porous carbonate apatite based on setting reaction of carbonate apatite granules
Kunio Ishikawa, Department of Biomaterials, Kyushu University, Fukuoka, Japan
-
- 18:00 340.7 Template-directed calcium phosphate mineralization using insoluble organic matrices
Yuping y Li, Restorative Sciences, University of Minnesota, Minneapolis, MN, United States
-
- 18:15 340.8 Responses of immune cells derived from mouse spleen to hydroxyapatite ceramics surface-modified with inositol phosphate and their morphology
Mamoru Aizawa, Applied Chemistry, Meiji University, Kawasaki, Japan
-

16:30 - 18:15

524

341 - New Frontiers Symposium

Injectable biomaterials for cell therapy and tissue engineering

*Chairs: Pierre Weiss, Dental Biomaterial, University of Nantes, Institut National de la Santé et de la Recherche Medicale (INSERM), Nantes, France
Marta Cerruti, Mining and Materials Engineering, McGill University, Montreal, QC, Canada*

-
- 16:30 341.1 Injectable foams for the delivery of mesenchymal stem cells
Michael E Whitely Jr, Biomedical Engineering, Texas A&M University, Houston, TX, United States
-
- 16:45 341.2 Injectable platform hydrogel for musculoskeletal regeneration
Abbey A Thorpe, Biomolecular Sciences Research Centre, Sheffield Hallam University, Sheffield, United Kingdom
-
- 17:00 341.3 A self-setting and tunable injectable hydrogel biomaterial for cell therapeutic treatment of irradiated colon
Pierre Weiss, Dental Biomaterial, University of Nantes, Institut National de la Santé et de la Recherche Medicale (INSERM), Nantes, France
-
- 17:15 341.4 Injectable surgical sealant for controlled cell delivery and fusion of cartilage-to-cartilage interfaces
Ashkan Tehrani, Department of Chemical Engineering, McCaig Institute for Bone and Joint Health, University of Calgary, Calgary, AB, Canada
-
- 17:30 341.5 Adhesive hydrogel nanocomposites with independently tunable rheology and mechanics for wet arthroscopic application
Shimon Unterman, Institute for Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge, MA, United States
-
- 17:45 341.6 Injectable hyaluronic acid composite hydrogel with nano calcium phosphate via in-situ precipitation for dermal filler applications
Seol-Ha Jeong, Seoul National University, Seoul, Korea (North)
-
- 18:00 341.7 Novel in-situ setting bioglass based calcium phosphate bone cements
Melanie J Coathup, Institute of Orthopaedics and Musculoskeletal Science, Division of Surgery and Interventional Science, University College London, Stanmore, United Kingdom
-

DETAILED PROGRAM

FRIDAY, MAY 20, 2016

17:00 - 17:45

513a

342 - Tutorial

Protip Medical - International academic/industrial research collaboration and the best practices for their valorization: cases of EU FP7 IMMODGEL and NanoTi projects

Sponsored By:



- | | | |
|-------|---|-----|
| 342.1 | Consortium forming, project development and effective project management for multinational research projects with industrial goals
Mercedes Dragovits , Steinbeis-Europa Zentrum, Karlsruhe, Germany | N/A |
| 342.2 | Commercial exploitation of multipartner research results by SMEs
Nihal Engin Vrana , Protip Medical, Strasbourg, France | N/A |
| 342.3 | Advantages of transatlantic collaboration and working with industrial partners for academic institutions
Amir Ghaemmaghami , University of Nottingham, Nottingham, United Kingdom
Dieter Scharnweber , TU Dresden, Dresden, Germany | N/A |

17:00 - 17:45

513b

343 - Tutorial

DSM - Controlling biologic response to biomaterials through the addition of autologous solutions

Sponsored By:



- | | | |
|--------|---|-----|
| Chair: | <i>Scott Goldman, Director of Innovation, Natural Materials, DSM Biomedical, Exton, PA, United States</i> | N/A |
| 343.1 | David Hoganson , Boston Children's Hospital, Boston, MA, United States | N/A |
| 343.2 | Renea Faulknor , Massachusetts General Hospital, Boston, MA, United States | N/A |

17:00 - 18:00

513c

344 - Tutorial

SFB BMPC SIG - Biomaterials and medical products commercialization: regulatory case studies - how to get to market?

Sponsored By:



- | | | |
|---------|--|-----|
| Chairs: | <i>Julia E Leslie, Neuromodulation, LivaNova, Houston, TX, United States</i>
<i>Eric M Sussman, Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, MD, United States</i> | |
| 344.1 | Karen Kennedy , Health Canada, Ottawa, ON, Canada | N/A |
| 344.2 | Sorin Alb , Nucro-Technics, Scarborough, ON, Canada | N/A |
| 344.3 | Nicholas J Christiano , Sterilization Sciences and Biological Safety, Arthrex Inc., Naples, FL, United States | N/A |
| 344.4 | Elaine Duncan , Paladin Medical, Inc., Stillwater, MN, United States | N/A |
| 344.5 | Beau L Rollins , Sterilization Sciences and Biological Safety, Arthrex, INC, Naples, FL, United States | N/A |

19:30 - 23:30

517bcd

Social Event

Montreal Vibe - A Night in the Park (Congress Party)



Please refer to page 18 for more details

DAY-AT-A-GLANCE

SATURDAY, MAY 20, 2016

07:30 - 17:30	Viger Hall - L200	Registration Desk	Registration open
09:30 - 17:00	220bcd	Exhibits	Exhibits open
09:00 - 10:00	517bcd	400 Plenary	Plenary Session 4 - Kazuhiko Ishihara
10:00 - 10:30	220bcd	Coffee Break	Coffee Break, Exhibits and Poster Viewing
10:30		Concurrent Sessions	
10:30 - 12:30	510a	401 New Frontiers Symposium	Convergence of biomaterials science and additive biomanufacturing
10:30 - 12:30	510b	402 General Session	Protein interactions with biomaterials
10:30 - 12:30	511e	403 New Frontiers Symposium	Biomedical imaging and theranostics: biomaterial design and applications
10:30 - 12:15	511f	404 General Session	Safety and toxicity evaluation for biomaterials
10:30 - 12:45	515	405 New Frontiers Symposium	Tissue engineered bone for osseous skull and maxillofacial reconstruction
10:30 - 12:15	516a	406 General Session	Biomaterials for cardiovascular applications: materials innovation for stents and endovascular prostheses
10:30 - 12:15	516c	407 General Session	Biomaterials for tissue substitutes: bone and cartilage constructs
10:30 - 12:15	517a	408 Round Table Panel Discussion	Avenues of scientific information dissemination
10:30 - 12:30	518	409 New Frontiers Symposium	Glycanotechnology
10:30 - 12:15	519	410 General Session	Metallic biomaterials and alloys
10:30 - 12:30	520b	411 General Session	Clinical performance of biomaterials
10:30 - 12:30	520c	412 New Frontiers Symposium	Neuroengineering: biomaterials-based approaches for modulating the neural microenvironment
10:30 - 12:15	524	413 New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
12:00 - 14:00		Lunch Break	Lunch, Exhibits and Poster Viewing
12:30 - 13:30	512	414 Lunch & Learn Session	Lunch & Learn Sessions
12:30 - 14:00	517a	415 Technical Forum	Elsevier - Meet the Biomaterials Editors Workshop
14:00 - 15:00		Concurrent Sessions	
14:00 - 15:00	510a	416 General Session	Plasma/high-energy processing of biomaterials
14:00 - 15:00	510b	417 General Session	Metallic biomaterials and alloys
14:00 - 15:00	511e	418 General Session	Imaging with biomaterials
14:00 - 15:00	511f	419 General Session	Biomaterials in microdevices and microarrays
14:00 - 15:00	515	420 New Frontiers Symposium	Tissue engineered bone for osseous skull and maxillofacial reconstruction
14:00 - 15:00	516a	421 General Session	Biomaterials to modulate biological processes involved in host response
14:00 - 15:00	516c	422 General Session	Biomaterials for tissue substitutes: bone and cartilage constructs
14:00 - 15:00	518	424 New Frontiers Symposium	Calcium phosphate mineralization and maturation for biomaterials
14:00 - 15:00	519	425 General Session	Biosensors
14:00 - 15:00	520b	426 Clinical Session: From Clinic to Bench	Case Study 1: New generation vascular grafts from tissue-engineered principles
14:00 - 15:00	520c	427 General Session	Biomaterials in mesenchymal and hematopoietic stem cell biology
14:00 - 15:00	524	428 General Session	Biomaterials for control of tissue induction
15:00 - 16:30	220bcd	Poster Networking	Poster Session 2B and Refreshments
16:30		Concurrent Sessions	
16:30 - 18:30	510a	430 New Frontiers Symposium	Laser processing of biomaterials
16:30 - 18:15	510b	431 New Frontiers Symposium	Living bioelectronics: enabling communication on the nanoscale
16:30 - 18:30	511e	432 General Session	Bioconjugates and interfacial phenomena
16:30 - 18:30	511f	433 New Frontiers Symposium	Engineered biomaterials for the management of bleeding and haemorrhage
16:30 - 18:15	516a	434 New Frontiers Symposium	Regenerated organs and artificial organs
16:30 - 18:30	516c	435 General Session	Biomaterials for tissue substitutes: vascular tissue engineering
16:30 - 18:30	517a	436 New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
16:30 - 18:15	518	437 New Frontiers Symposium	Biomedical imaging and theranostics: biomaterial design and applications
16:30 - 18:15	519	438 General Session	Composites: polymeric, ceramic and metallic
16:30 - 17:30	520b	439 Clinical Session: From Clinic to Bench	Case Study 2: Tissue-engineered cartilage constructs
17:30 - 18:30	520b	440 Clinical Session: From Clinic to Bench	Case Study 3: Regenerative medicine enabled by growth factors and biomaterial scaffolds
16:30 - 18:30	520c	441 New Frontiers Symposium	Neuroengineering: biomaterials-based approaches for modulating the neural microenvironment
16:30 - 18:30	524	442 New Frontiers Symposium	Tissue-specific delivery strategies for mesenchymal stem cells
20:00 - 02:00	Offsite	Social Event	"Forget science for once" Student Dance Party - Open to Everyone (\$10 reservation fee for paid delegates) Société des Arts Technologiques [SAT], 1201 Boul St-Laurent, Montréal

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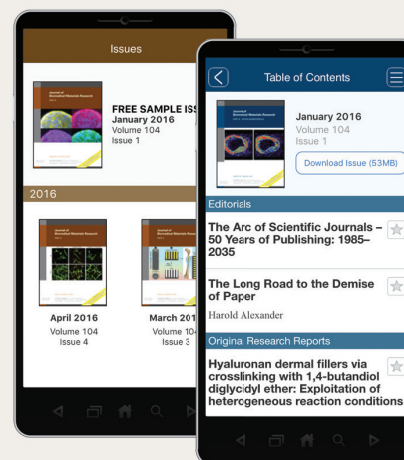
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WILEY

DETAILED PROGRAM

SATURDAY, MAY 21, 2016

07:30 - 17:30 Viger Hall - 200 level

Registration open

09:30 - 17:00 220bcd

Exhibits open

09:00 - 10:00 517bcd

400 - Plenary Plenary Session 4

Chairs: *Shelly Sakiyama-Elbert, Biomedical Engineering, Washington University, St. Louis, MO, United States*
Matteo Santin, Brighton Centre for Regenerative Medicine, University of Brighton, Brighton, United Kingdom

- 400.1 Bioinspired polymeric materials: progress from molecular science to medical devices
Kazuhiko Ishihara, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan

10:00 - 10:30 220bcd

Coffee Break, Exhibits and Poster Viewing

10:30 - 12:30 510a

401 - New Frontiers Symposium Convergence of biomaterials science and additive biomanufacturing

Chairs: *Takayoshi Nakano, Division of Materials & Manufacturing Science, Division of Materials & Manufacturing Science, Osaka University, Suita, Japan*
Dietmar W Huttmacher, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia
Elena M. De-Juan-Pardo, Queensland University of Technology, Brisbane, Australia

- 10:30 401.1 A new approach for bioceramic additive manufacturing
Hui-suk Yun, Powder & Ceramics Division, Korean Institute of Materials Science, Changwon, Korea
- 11:00 401.2 Are developments in biomaterials science converging fast enough with additive manufacturing and biofabrication technologies for translational regenerative medicine?
Tim BF Woodfield, Department of Orthopaedic Surgery, Centre for Bioengineering & Nanomedicine, University of Otago, Christchurch, New Zealand
- 11:30 401.3 Multi- and mixed 3D-printing of graphene-hydroxyapatite hybrid materials for complex tissue engineering
Ramille N Shah, Materials Science and Engineering and Surgery (Transplant Division), Northwestern University, Chicago, IL, United States
- 11:45 401.4 Development of a new powder/solid composite for Ti alloy implants exhibiting mechanical properties similar to bone anisotropy by metal additive biomanufacturing
Takayoshi Nakano, Division of Materials & Manufacturing Science, Division of Materials & Manufacturing Science, Osaka University, Suita, Japan
- 12:00 401.5 Long-term osseointegration of 3D printed CoCr implants with an interconnected open-pore architecture
Furqan A Shah, University of Gothenburg, Gothenburg, Sweden
- 12:15 401.6 Making the most of additive layer manufacture - development of tailored titanium implants with embedded therapeutics
Sophie C Cox, Chemical Engineering, University of Birmingham, Birmingham, United Kingdom

10:30 - 12:30

510b

402 - General Session

Protein interactions with biomaterials

Chairs: Qiang Ye, Bioengineering Research Center Laboratories, University of Kansas, Lawrence, KS, United States
Bruce Milthorpe, Faculty of Science, University of Technology Sydney, Broadway, Australia

- 10:30 402.1 Chitosan influence on A β aggregation in the presence of cooper ions
Marisa M Beppu, School of Chemical Engineering, University of Campinas, Campinas, Brazil
- 10:45 402.2 Polymer chain mobility dependent fetuin adsorption affects cell proliferation on elastomer surfaces
Brian G Amsden, Chemical Engineering, Queen's University, Kingston, ON, Canada
- 11:00 402.3 Biofunctionalization of degradable polar/hydrophobic/ionic polyurethanes with different fibronectin coatings: study of monocyte behavior
Audrey Gossart, Cardiovascular Bioengineering, Laboratory for Vascular Translational Science, Hôpital Bichat-Claude Bernard, France, France
- 11:15 402.4 Novel polyvinyl alcohol derivatives as scaffolds for hepatocyte culture and hepatotoxicity of drugs
Mircea A Mateescu, Department of Chemistry, Université du Québec à Montréal, Montreal, QC, Canada
- 11:30 402.5 Amphiphilic coil-tags for the direct and oriented adsorption of growth factors on biomaterials
Frederic Murschel, Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, QC, Canada
- 11:45 402.6 Molecularly imprinted polymers for protein capture, sequestration, and delivery
John R Clegg, Biomedical Engineering, University of Texas at Austin, Austin, TX, United States
- 12:00 402.7 The atomic ordering and its correlation to protein adsorption on biocompatible metal oxide coatings
Phaedra Silva-Bermudez, Tissue Engineering, Cell Therapy and Regenerative Medicine Unit, National Institute of Rehabilitation Medicine, Mexico, Mexico
- 12:15 402.8 A comparative study of different methods of carboxylation on polyethylene terephthalate to improve antifouling property
Balaji Ramachandran, Department of Biotechnology, Indian Institute of Technology Madras, Chennai, India

10:30 - 12:30

511e

403 - New Frontiers Symposium

Biomedical imaging and theranostics: biomaterial design and applications

Chairs: Benjamin M Yeh, UCSF Department of Radiology and Biomedical Imaging, University of California, San Francisco, San Francisco, CA, United States
Gang Zheng, Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

- 10:30 403.1 Bio-inspired nanovesicles as a versatile drug delivery system for imaging-guided cancer therapy
Gang Liu, Xiamen University, Xiamen, P.R. China
- 10:45 403.2 From nano to micro, and back: porphyrin-based cancer theranostics
Gang Zheng, Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada
- 11:00 403.3 Developing Magnetic Particle Imaging (MPI) tracers for in vivo tissue-targeted applications
Hamed Arami, Materials Science, University of Washington, Seattle, WA, United States
- 11:15 403.4 Nanoprobe biomaterials for breast cancer imaging and therapeutic visualization
Aiguo Wu, Functional Materials & Nanodevices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, P.R. China
- 11:30 403.5 Functional single chain polymer nanoparticles: targeting and imaging pancreatic tumors in vivo
Iraida Loiaz, Materials Division, Fundación CIDETEC, San Sebastian, Spain
- 11:45 403.6 Natural polysaccharide pullulan as anti-cancer drug carriers for hepatic targeting
Yujiang Fan, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- 12:00 403.7 Multifunctional noncovalent polymer-gatekeeper in mesoporous silica nanoparticles as a drug delivery platform
Ja-Hyoung Ryu, Department of Chemistry, Ulsan National Institute of Science and Technology, Ulsan, Korea
- 12:15 403.8 3D multiplex immunoplasmonics microscopy
Eric Bergeron, Department of Engineering Physics, Polytechnique Montreal, Montréal, QC, Canada

10:30 - 12:15

511f

404 - General Session

Safety and toxicity evaluation for biomaterials

Chairs: Lu W William, Orthopedics, The University of Hong Kong, Pok Fu Lam, Hong Kong
Hongbing He, Pine&Power Biotech Co., Ltd, Shanghai, P.R. China

- 10:30 404.1 Artefacts and lies: understanding the limitations of your biochemical assays when studying biomaterials
Marianne B Ariganello, Independent Consultant, Ottawa, ON, Canada
- 10:45 404.2 Application of multi-biomics technologies in the research of molecular mechanism of biomaterial-cell interaction
Xiaoying Lü, School of Biological Science and Medical Engineering, Southeast University, Nanjing, P.R. China
- 11:00 404.3 Biologic evaluation of devices with chronic exposure using 3D human gingival model
Nima Roohpour, Oral Care Innovation, Glaxosmithkline, Weybridge, United Kingdom
- 11:15 404.4 Effect of chromium-doped diamond-like carbon on growth and differentiation of Saos-2 osteoblast-like cells and on cytokine production of RAW 264.7 monocytes
Elena Filova, Department of Biomaterials and Tissue Engineering, Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic
- 11:30 404.5 Biological effects of cobalt-chromium nanoparticles and silicon nitride submicron and nanoparticles on L929 murine fibroblasts and primary porcine dural fibroblasts
Kinga M Pasko, School of Mechanical Engineering, University of Leeds, Leeds, United Kingdom
- 11:45 404.6 Transcription factor Nrf2 regulates adaptive cell responses towards resin monomer-induced oxidative stress through the activation of enzymatic antioxidants
Helmut Schweikl, Department of Operative Dentistry and Periodontology, University Hospital Regensburg, Regensburg, Germany
- 12:00 404.7 The effect of cobalt chrome and stainless steel particles generated by Total Disc Replacements on the viability of cells of the CNS
Joanne Tipper, Institute of Medical and Biological Engineering, University of Leeds, Leeds, United Kingdom

10:30 - 12:45

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405 - New Frontiers Symposium

Tissue engineered bone for osseous skull and maxillofacial reconstruction

Chairs: Fu-Zhai Cui, Tsinghua University, Beijing, P.R. China
Insup Noh, Department of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology, Seoul, Korea

- 10:30 405.1 Oral and maxillofacial bone reconstruction
John A Jansen, Dentistry - Biomaterials, Radboudumc, Nijmegen, Netherlands
- 11:00 405.2 Mineralized collagen-based bone materials for bone regeneration in cranial defect of immaturity
Xiumei Wang, School of Materials Science and Engineering, Tsinghua University, Beijing, P.R. China
- 11:15 405.3 Vascularization of β -tricalcium phosphate scaffolds for bone tissue regeneration
Yunqing Kevin Kang, Mechanical Engineering, Florida Atlantic University, Boca Raton, FL, United States
- 11:30 405.4 Long-term skull regeneration using chitosan-siloxane porous hybrids
Yuki Shirosaki, Frontier research Academy for Young Researchers, Kyushu Institute of Technology, Kitakyushu, Japan
- 11:45 405.5 Controlled surface retention of osteogenic peptide-5 derived from BMP-2 on functionalized electrospun nanofibers for guided bone regeneration
Heungsoo Shin, Bioengineering, Hanyang University, Seoul, Korea
- 12:00 405.6 In vitro and in vivo evaluation of osteoinductive composite scaffolds manufactured by stereolithography
Olivier Guillaume, AO Research Institute, AO Foundation, Davos, Switzerland
- 12:15 405.7 Finely tuned fiber-based porous structures for bone tissue engineering applications
Viviana P Ribeiro, Department of Polymer Engineering, 3B's Research Group, Guimarães, Portugal
- 12:30 405.8 Fabrication of micro/nanofiber hybrid scaffolds for bone tissue formation
Hongjun Wang, Biomedical Engineering, Chemistry and Biological Sciences, Stevens Institute of Technology, Hoboken, NJ, United States

10:30 - 12:15

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406 - General Session

Biomaterials for cardiovascular applications: materials innovation for stents and endovascular prostheses

Chairs: **Jiandong Ding**, Department of Macromolecular Science, Fudan University, Shanghai, P.R. China
Dimitrios Stamatialis, Biomaterials Science and Technology, University of Twente, Enschede, Netherlands

- 10:30 406.1 Tailoring of dopamine-coated stainless steel with Cu(II)-loaded multifunctional nanoparticles for improving the biocompatibility
Tao Liu, Huaiyin Institute of Technology, Huai'an, P.R. China
- 10:45 406.2 Proliferation and functionality of blood vascular cells on Angiopoietin-1 modified 316L Stainless Steel
Xin Li, Key Lab. of Advanced Technology for Materials of Education Ministry, Southwest Jiaotong University, Chengdu, P.R. China
- 11:00 406.3 In vivo study on new coronary stents made of high-nitrogen nickel-free stainless steel
Ke Yang, Institute of Metal Research, CAS, Shenyang, P.R. China
- 11:15 406.4 Biodegradable, Elastomeric Coatings with Controlled Anti-proliferative Agent Release for Magnesium-based Cardiovascular Stents
Xinzhu Gu, McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA, United States
- 11:30 406.5 Toughened and reinforced resorbable hybrid polymer-glass biocomposites for cardiovascular stent applications
Christopher Lovell, Healthcare, Lucideon, Staffordshire, United Kingdom
- 11:45 406.6 Accelerated fatigue study of in situ fenestrated endovascular stent grafts deployed inside the 3D phantom of a patient's aortic arch aneurysm
Martin W King, College of Textiles, North Carolina State University, Raleigh, NC, United States
- 12:00 406.7 An in-vitro twisting test to study the fabrics durability of endovascular stent-grafts supported with zig-zag or ringed stents
Jing Lin, Key Laboratory of Textile Science and Technology of Ministry of Education, College of Textiles, Donghua University, Shanghai, P.R. China

10:30 - 12:15

516c

407 - General Session

Biomaterials for tissue substitutes: bone and cartilage constructs

Chairs: **Dave Puleo**, College of Engineering, University of Kentucky, Lexington, KY, United States
Liisa Kuhn, University of Connecticut Health Center, Farmington, CT, United States

- 10:30 407.1 Development & performance assessment of a new atmp for cartilage tissue engineering
Rui A Sousa, Stematters SA, Guimarães, Portugal
- 10:45 407.2 Surface functionalization of porous titanium scaffold for bone tissue engineering
Bingjun Zhang, Southwest Jiaotong University, Chengdu, P.R. China
- 11:00 407.3 Development of 3-D printed silica-gelatin hybrid scaffolds for cartilage tissue engineering: effect of material geometry on cartilaginous matrix formation
Siwei Li, Department of Materials, Imperial College London, London, United Kingdom
- 11:15 407.4 Phosphate functionalized graphene oxide as a bone graft substitute material
Brian D Holt, Chemistry, Carnegie Mellon University, Pittsburgh, PA, United States
- 11:30 407.5 Injectable stem cell laden photo-crosslinkable gelatin microspheres for rapid generation of osteogenic tissue constructs
Xin Zhao, Xi'an Jiaotong University, Xi'an, P.R. China
- 11:45 407.6 Biomimetic functionalized graphene for biodegradable bone implants
Anne M Arnold, Chemistry, Carnegie Mellon University, Pittsburgh, PA, United States
- 12:00 407.7 Developing Strontium-substituted Bioglass and Polycaprolactone composite scaffolds for bone repair via hybrid electrospinning in the direct writing mode
Jiongyu Ren, The Institute of Health and Biomedical Innovation, Queensland University of Technology, Keppera, Australia

10:30 - 12:15

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408 - Round Table Panel Discussion

Avenues of scientific information dissemination

Chairs: **Milica Radisic**, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
Takao Hanawa, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

- 408.1 Frontiers and loop: models for open access and research metrics
Marie Soulière, Physical Sciences and Engineering Journals Portfolio, Frontiers, Lausanne, Switzerland N/A
- 408.2 Avenues of scientific information dissemination
Marina Soares E Silva, Materials Science Journals, Elsevier, Amsterdam, Netherlands N/A
- 408.3 Avenues of scientific information dissemination
Paulomi Majumder, Publications, American Chemical Society, Washington, DC, United States N/A
- 408.4 Avenues of scientific information dissemination
Avital Braiman, JoVE, Cambridge, MA, United States N/A
- 408.5 Nature's selection and dissemination jobs
Pep Pàmies, Nature Research, Springer Nature, London, United Kingdom N/A
- 408.6 Avenues of scientific information dissemination
Megan Frisk, Science Translational Medicine, American Association for the Advancement of Science (AAAS), Washington, DC, United States N/A

10:30 - 12:30

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409 - New Frontiers Symposium

Glycanotechnology

Chairs: **Ravin Narain**, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada
Jayachandran Kizhakkedathu, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada

- 10:30 409.1 Trehalose glycopolymer hydrogels and conjugates for protein stabilization
Heather D Maynard, Chemistry and Biochemistry, University of California Los Angeles, Los Angeles, CA, United States
- 11:00 409.2 Pathogen identification with glycosylated surfaces and nano sensors
Matthew I Gibson, Chemistry, University of Warwick, Coventry, United Kingdom
- 11:15 409.3 Blood compatibility of carbohydrate based nanogels and surfaces: influence of polymer architecture and chemistry
Jayachandran Kizhakkedathu, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada
- 11:30 409.4 Targeting bacteria with glycanomaterials
Mingdi Yan, Mingdi Yan, KTH, Stockholm, Sweden

- 11:45 409.5 Sulfated glycopolymers for glycosaminoglycan mimics and nanomedicine
Yoshiko Miura, Chemical Engineering, Kyushu University, Fukuoka, Japan
- 12:00 409.6 Dynamic chemistry of glycanomaterials
Olof Ramstrom, KTH, Royal Institute of Technology, Stockholm, Sweden
- 12:15 409.7 Carbohydrate based nanomedicine for liver cancer targeting and therapy
Ravin Narain, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada

10:30 - 12:15

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410 - General Session

Metallic biomaterials and alloys

Chairs: **Silvia M Ceré**, Department of Electrochemistry and Corrosion, INTEMA, University of Mar del Plata, CONICET, Mar del Plata, Argentina
Jean Jacques Pireaux, University of Namur, Namur, Belgium

- 10:30 410.1 Biodegradable metals are multifunctional biomaterials: new concepts, risks and opportunities
Frank Witte, Julius Wolff Institute and Berlin-brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany
- 11:00 410.2 MRI Artifact-free Au-Nb-Ti alloy of high hardness for biomedical applications
Kenichi Hamada, Biomaterials and Bioengineering, Institute of Biomedical Sciences, Tokushima, Japan
- 11:15 410.3 The use of x-ray micro-computed tomography for evaluation of bone growth in 3D printed metal implants - Correlation with histology
Anders Palmquist, Department of Biomaterials, Sahlgrenska Academy at University of Gothenburg, Göteborg, Sweden
- 11:30 410.4 Corrosion behavior of biodegradable Mg-Zn-Ca alloys after thermal treatment N/A
Martina Cihova, Laboratory for Metal Physics and Technology, Department of Materials, ETH Zurich, Zurich, Switzerland
- 11:45 410.5 Ti-based functionally graded porous structure for dual drug delivery system
Hyun Lee, Seoul National University, Seoul, Korea
- 12:00 410.6 Microstructure and biodegradation behaviour of new degradable composite - Fe-Mg₂Si for biomedical applications
Malgorzata Sikora-Jasinska, Department of Mechanical Engineering, Politecnico di Milano, Milano, Italy

10:30 - 12:30

520b

411 - General Session

Clinical performance of biomaterials

Chairs: Lynne Jones, Orthopaedic Surgery, Johns Hopkins University School of Medicine, Baltimore, MD, United States
Min Wang, The University of Hong Kong, Hong Kong

- 10:30 411.1 Fast healing of diabetic foot ulcers by combining autologous fibroblasts culture with biopolymers films
Paula T Colpas, Dermatology, Unicamp, Campinas, Brazil
- 10:45 411.2 Pore size analysis of explanted surgical mesh with associated clinical outcomes
Xinyue Lu, Clemson University, Central, SC, United States
- 11:00 411.3 Expanded autologous MSCs and biomaterials in non-unions: a European clinical trial
Pierre Layrolle, Lab. Pathophysiology of bone resorption, Institut National de la Santé et de la Recherche Medicale (INSERM), Nantes, France
- 11:15 411.4 Porcine anorganic bone mineral for guided bone regeneration in dental surgeries part ii: in vivo animal study and human case study
Hui-Chen Chen, Research & Development, Collagen Matrix Inc., Oakland, NJ, United States
- 11:30 411.5 Pseudotumors in metal on polyethylene total hip arthroplasty: a fibrosis of the joint capsule
Felipe Eltit, Materials Engineering, University of British Columbia, Vancouver, BC, Canada
- 11:45 411.6 5 years clinic trial result of a stent with time sequence functions
Nan Huang, Key Lab. of Advanced Technology of Materials, Ministry of Education, Southwest Jiaotong University, Chengdu, P.R. China
- 12:00 411.7 Non-thermal plasma discharge inside a sealed bag to sterilize and to preserve the sterile state of a medical device
Marie-Paule Claire Gelle, Biomatériaux et Inflammation en Site Osseux, University of Reims- Champagne-Ardennes, Reims, France
- 12:15 411.8 Prospective study on the diagnostics and susceptibility testing of infections associated with osseointegrated percutaneous implants
Magdalena N Zaborowska, Department of Biomaterials, Gothenburg, Sweden

10:30 - 12:30

520c

412 - New Frontiers Symposium

Neuroengineering: biomaterials-based approaches for modulating the neural microenvironment

Chairs: Shelly Sakiyama-Elbert, Biomedical Engineering, Washington University, St. Louis, MO, United States
Abhay Pandit, Center for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland

- 10:30 412.1 Modulating the cellular microenvironment in the central nervous system for enhanced cell survival and integration
Molly S Shoichet, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- 11:00 412.2 Injectable playfoam like hydrogels for brain tissue repair
Tatiana Segura, Chemical and Biomolecular Engineering, Los Angeles, CA, United States
- 11:15 412.3 Covalent immobilization of azide-tagged interferon-gamma for the generation of adult stem cell-derived neuroepithelium
Trevor R Ham, Biomedical Engineering, University of Akron, Akron, OH, United States
- 11:30 412.4 Increased neural transplant migration to SDF-1alpha gradients through a hyaluronic acid-laminin hydrogel
Caroline P Addington, School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, United States
- 11:45 412.5 Diamond - towards a "one material" multi electrode array for neuronal recording
Paul A Nistor, Regenerative Medicine Laboratory, University of Bristol, Bristol, United Kingdom
- 12:00 412.6 Self-assembling peptide scaffolds support human embryonic stem cell-derived cortical transplants in a model of stroke
David Nisbet, Research School of Engineering, The Australian National University, Acton, Australia
- 12:15 412.7 Membrane bioreactor for neural growth and differentiation
Sabrina Morelli, National Research Council of Italy, Institute on Membrane Technology, Rende, Italy

10:30 - 12:15

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413 - New Frontiers Symposium Bioinspired materials and devices for regenerative medicine

Sponsored By:



Chairs: Shengmin Zhang, Huazhong University of Science and Technology, Wuhan, P.R. China
Yin Xiao, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

- 10:30 413.1 Mechanical stretching induced alternation of cell attachment and detachment character of poly(N-isopropylacrylamide) gel grafted PDMS surface
Yoshikatsu Akiyama, Tokyo Women's Medical University, Tokyo, Japan
- 10:45 413.2 Fibronectin regulates enhanced wear protection of lubricin and mimetic lubricin during shear
Roberto C Andresen Eguiluz, Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
- 11:00 413.3 Effects of varying degrees of surface strain anisotropies on endothelial cells
Ravi Sinha, Department of Biomechanical Engineering, University of Twente, Enschede, Netherlands
- 11:15 413.4 Scaffold curvature-driven endogenous soft matrix guides mineralization
Amaia Cipitria, Julius Wolff Institute, University of Berlin, Berlin, Germany
- 11:30 413.5 Scientific design, realization and clinical use of human derived dermal matrix (HDM) in regenerative medicine
Valeria Purpura, Emilia Romagna Regional Skin Bank, Bufalini Hospital, Cesena, Italy
- 11:45 413.6 Harnessing notch signaling to enhance osteoblast mineralization for scaffold-based bone regeneration
Chunhui Jiang, Agricultural & Biological Engineering, Purdue University, West Lafayette, IN, United States
- 12:00 413.7 In vitro fabrication of extracellular matrix-rich tissue equivalents
Kyriakos M Spanoudes, SFI Centre for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland

12:00 - 14:00

Lunch, Exhibits and Poster Viewing

12:30 - 13:30

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414 - Lunch & Learn Sessions (Sold Out)

- 414.40 Animals in biomaterials research
Martijn Van Griensven, Experimental Trauma Surgery, Klinikum rechts der Isar, Technical University of Munich, Munich, Germany N/A
- 414.41 Bioactive material engineering for tissue regeneration
Yoon Jeong Park, Department of Dental Regenerative Biotechnology, Oral Biochemistry, School of Dentistry, Seoul National University, Seoul, Korea N/A
- 414.42 Biomaterials for regenerative medicine
Yoshihiro Ito, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan N/A
- 414.43 Biomaterials research in an industrial setting
Ajit Nair, Boston Scientific, San Francisco, CA, United States N/A
- 414.44 Biomaterials science and technology of tissue inducing materials and devices
Guoping Chen, National Institute for Materials Science, Tsukuba, Japan N/A
- 414.46 Career development pathways for early career biomaterials scientists
Laura Poole-Warren, University of New South Wales, Sydney, Australia N/A
- 414.48 Choosing your postdoctoral advisor: a decision that will affect the rest of your professional life
Joachim B Kohn, New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, United States N/A
- 414.50 Cutting edge multidisciplinary biomaterials research
Kristi Anseth, Chemical and Biological Engineering, University of Colorado, Boulder, CO, United States N/A
- 414.51 Effective research mentoring
David K Mills, Biological Sciences/Biomedical Engineering, Louisiana Tech University, Ruston, LA, United States N/A
- 414.52 Integrative biomaterials in composite tissue regeneration
Helen H Lu, Biomedical Engineering, Columbia University, New York, NY, United States N/A
- 414.53 Language of biomaterials science
David F Williams, Morgan & Masterson LLC, Winston-Salem, NC, United States N/A
- 414.54 New approach in employing nanotechnology for biomaterials development
Evelyn Yim, Chemical Engineering, University of Waterloo, Waterloo, ON, Canada N/A
- 414.55 Non-fouling PEG surfaces
Allan S Hoffman, Bioengineering, University of Washington, Seattle, WA, United States N/A
- 414.57 Scholarly publications
David Tirrell, Chemical Engineering, Caltech, Pasadena, CA, United States N/A
- 414.58 So you want to be an administrator: why you should
Kimberly Woodhouse, Faculty of Engineering and Applied Science, Queen's University, Kingston, ON, Canada N/A

- 414.59 Textiles and fibrous biomaterials for medical applications: education and research in China
Lu Wang, College of Textiles, Donghua University, Shanghai, P.R. China N/A
- 414.60 Transitioning from academia to industry: my first two years
Maria Pereira, Gecko Biomedical, Paris, France N/A

12:30 - 14:00 517a

415 - Technical Forum

Meet the Biomaterials Editors Workshop

Sponsored By:



- 415.1 **Kam W Leong**, Department of Biomedical Engineering, Columbia University, New York, NY, United States N/A
- 415.2 **Stefania Mazzitelli**, Elsevier, Amsterdam, Netherlands N/A
- 415.3 **Marina Soares E Silva**, Materials Science Journals, Elsevier, Amsterdam, Netherlands N/A
- 415.4 **Christiane Barranguet**, Elsevier, Amsterdam, Netherlands N/A
- 415.5 **Laura Poole-Warren**, University of New South Wales, Sydney, Australia N/A
- 415.6 **Abhay Pandit**, Center for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland N/A

14:00 - 15:00 510a

416 - General Session

Plasma/high-energy processing of biomaterials

Chairs: **Huiliang Cao**, State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China
Gaétan Laroche, Materials Engineering, Université Laval, Quebec, QC, Canada

- 14:00 416.1 Quasi-zwitterionic glow-discharge radio frequency plasma coatings
Marvin M Mecwan, Bioengineering, University of Washington, Seattle, WA, United States
- 14:15 416.2 Novel graphene nanoplatelet reinforced 45S5 bioglass Composites Fabricated by Spark Plasma Sintering (SPS)
Khiam Aik Khor, School of Mechanical & Aerospace Engineering, Nanyang Technological University, Singapore, Singapore
- 14:30 416.3 Surface modification of biomaterials by metal plasma immersion ion implantation and deposition (MPIIID)
Huiliang Cao, State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China
- 14:45 416.4 Surface modification by atmospheric pressure plasma deposition of HMDSO for anti-bacterial applications
Yu-Chun Lin, Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan

14:00 - 15:00 510b

417 - General Session

Metallic biomaterials and alloys

Chairs: **Rizhi Wang**, Department of Materials Engineering, University of British Columbia, Vancouver, Canada
Maurizio Vedani, Mechanical Department, Politecnico di Milano, Milan, Italy

- 14:00 417.1 Superelastic beta-metastable Ti-based alloys: biomechanical compatibility, surface characteristics, corrosion resistance, and cytotoxicity
Vladimir Brailovski, Mechanical Engineering, École de Technologie Supérieure, Montreal, QC, Canada
- 14:15 417.2 Characterization of novel Zn-based alloys for biodegradable stent application
Maurizio Vedani, Mechanical Department, Politecnico di Milano, Milan, Italy
- 14:30 417.3 Development of biodegradable occlusion device using ductile magnesium-zinc-calcium alloy
Naoko Ikeo, Department of Mechanical Engineering, Kobe University, Kobe, Japan
- 14:45 417.4 Bone-mimetic hydroxyapatite coated porous magnesium for biomedical applications
Min-Ho Kang, Department of Materials Science and Engineering, Seoul National University, Seoul, Korea

14:00 - 15:00 511e

418 - General Session

Imaging with biomaterials

Chairs: **Lorenzo Albertazzi**, Institute for Bioengineering of Catalonia, Barcelona, Spain
Iraida Loinaz, Materials Division, Fundación CIDETEC, San Sebastian, Spain

- 14:00 418.1 Branched PEG-based novel MRI contrast agents for monitoring the survival period of transplanted stem cells
Yu-I Hsu, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Osaka, Japan
- 14:15 418.2 Fucoidan: a marine polysaccharide for SPECT diagnosis of thrombosis
Lucas Chollet, Laboratory for Vascular Translational Science (LVTS), Villetaneuse, France
- 14:30 418.3 Discovery of dual-emissive probe for mitochondria
Gaocan Li, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- 14:45 418.4 Ultrasound activated marker for in vivo biomedical device detection
Jian Yang, Chemistry and Biochemistry, University of California, San Diego, San Diego, CA, United States

14:00 - 15:00

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419 - General Session

Biomaterials in microdevices and microarrays

Chairs: Harald Stöver, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada
Stephanie J Bryant, Chemical and Biological Engineering, University of Colorado, Boulder, CO, United States

- 14:00 419.1 Surface functionalization on biomaterials by precise fabrication of the phospholipid polymer brush layer
Kyoko Fukazawa, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan
- 14:15 419.2 A novel method for the coating of pancreatic beta-cell spheroids
Niusha Nikravesh, Chemical Engineering, The University of Birmingham, Birmingham, United Kingdom
- 14:30 419.3 Engineering 2D cell culture platforms to simulate 3D chemotherapeutic response
Stephanie Mok, Chemical Engineering, McGill University, Montreal, QC, Canada
- 14:45 419.4 Myelinated 3D neural culture platform as a physiological model of diabetic peripheral neuropathy
Ashwin Sivakumar, Biomedical Engineering, Tulane University, New Orleans, LA, United States

14:00 - 15:00

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420 - New Frontiers Symposium

Tissue engineered bone for osseous skull and maxillofacial reconstruction

Chair: Xiumei Wang, School of Materials Science and Engineering, Tsinghua University, Beijing, P.R. China

- 14:00 420.1 Development of an original model to investigate cell communication in bone tissue engineering
Agathe Grémare, U1026 Institut National de la Santé et de la Recherche Médicale (INSERM), Bordeaux, France
- 14:15 420.2 Bone tissue engineering using STRO-1 positive porcine dental germ stem cells encapsulated in a poly-ethylene glycol based hydrogel
Görke Gürel Peközer, Genetics and Bioengineering, Yeditepe University, Istanbul, Turkey
- 14:30 420.3 Reconstruction of oro-facial region; challenges and opportunities
Ashraf Farouk Ayoub, Clinical Dentistry, University of Glasgow, Glasgow, United Kingdom
- 14:45 420.4 Acoustic radiation force to mechanically load hydrogel-encapsulated osteoblasts for regenerative engineering-based bone repair
Yusuf Khan, Orthopaedic Surgery, University of Connecticut Health Center, Farmington, CT, United States

14:00 - 15:00

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421 - General Session

Biomaterials to modulate biological processes involved in host response

Chairs: Fang Yang, Radboud University Medical Center, Nijmegen, Netherlands
Marc-Andre Fortin, Génie des M.M.Matériaux, Université Laval, Quebec, QC, Canada

- 14:00 421.1 Preferential recruitment of anti-inflammatory monocytes significantly enhances peripheral nerve regeneration
Nassir Mokarram, Biomedical Engineering, Georgia Institute of Technology/Emory University, Atlanta, GA, United States
- 14:15 421.2 Membrane potential controls macrophage activation
Joshua D Erndt-Marino, Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States
- 14:30 421.3 Regulation of inflammation, neurotrophins, glycosylation, sensory nerve innervation and pain in intervertebral disc degeneration using an implantable hyaluronic acid hydrogel
Isma Liza Mohd Isa, Centre for Research in Medical Devices (CÚRAM) and Anatomy, National University of Ireland, Galway, Ireland
- 14:45 421.4 Use of IVIS to track cellular infiltration into nanocomposite hydrogels
Sara E Strecker, Institute for Medical Engineering and Science, MIT, Cambridge, MA, United States

14:00 - 15:00

516c

422 - General Session

Biomaterials for tissue substitutes: bone and cartilage constructs

Chairs: Adalberto Rosa, Oral & Maxillofacial Surgery, School of Dentistry of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil
Mauro Alini, Musculoskeletal Regeneration, AO Research Institute Davos, Davos Platz, Switzerland

- 14:00 422.1 Novel 3D nano-fabricated zonal scaffolds for articular cartilage regeneration
Ying Yang, Institute for Science and Technology in Medicine, Keele University, Newcastle-under-lyme, United Kingdom
- 14:15 422.2 Hydrogels with dual gradient of biochemical and mechanical cues induces cartilage tissue formation in 3D that mimics tissue zonal organization
Danqing Zhu, Bioengineering, Stanford University, Stanford, CA, United States
- 14:30 422.3 Development of calcium-binding fibers for reinforcement of calcium phosphate ceramics
Daniela Petre, Department of Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands N/A
- 14:45 422.4 Engineering of a glucose delivery system based-hydrogel composite scaffold for enhancing mesenchymal stem cells survival
Emmanuel Pauthe, Biology, Biomaterial Science, University of Cergy-Pontoise, Pontoise, France

14:00 - 15:00

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424 - New Frontiers Symposium

Calcium phosphate mineralization and maturation for biomaterials

Chairs: Kunio Ishikawa, Department of Biomaterials, Kyushu University, Fukuoka, Japan
Kyosuke Ueda, Department of Materials Processing, Tohoku University, Sendai, Japan

- 14:00 424.1 Hydroxyapatite or Calcite: how does physiological proteins influence the type, mechanism and kinetics of their formation on bioactive glasses?
Gowsihan Poologasundarampillai, School of Materials, University of Manchester, Didcot, United Kingdom
- 14:15 424.2 Characterization of mineral deposits in matrix gla protein-deficient mice, a model of vascular matrix calcification
Ophélie Gourgas, Mining and Materials Engineering, McGill University, Montréal, QC, Canada
- 14:30 424.3 Calcium-phosphate slurry processing: a novel chemical treatment technique to activate osteogenesis on titanium
Naofumi Ohtsu, Instrumental Analysis Center, Kitami Institute of Technology, Kitami, Japan
- 14:45 424.4 Fabrication and evaluation of Nb-containing amorphous calcium phosphate coating film on Ti
Kyosuke Ueda, Department of Materials Processing, Tohoku University, Sendai, Japan

14:00 - 15:00

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425 - General Session

Biosensors

Chairs: Bora Garipcan, Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey
Hyun-Joong Chung, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada

- 14:00 425.1 Fibronectin-based nanomechanical biosensors towards measuring cell-generated strains during tissue morphogenesis
Alkiviadis Tsamis, Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- 14:15 425.2 Biosensors for monitoring of enzymatic wound healing processes
Dagmara Jankowska, Laboratory for Biointerfaces, Empa Swiss Federal Laboratories for Materials Science and Technology, St. Gallen, Switzerland
- 14:30 425.3 Colorimetric snp genotyping utilizing colloidal stability of double-stranded DNA-functionalized gold nanoparticles having a dangling end
Yoshitsugu Akiyama, Faculty of Industrial Science and Technology, Tokyo University of Science, Hokkaido, Japan
- 14:45 425.4 A signal amplification strategy via enzymatic cascade reactions for ultrasensitive DNA detection
Eunjung Kim, Materials, Imperial College London, London, United Kingdom

14:00 - 15:00

520b

426 - Clinical Session: From Clinic to Bench

Case Study 1: New generation vascular grafts from tissue-engineered principles

Chairs: Patrick C H Hsieh, Institute of Biomedical Sciences (IBMS), Academia Sinica, Taipei, Taiwan
Christopher Breuer, Pediatric Surgery, Nationwide Children's Hospital, Columbus, OH, United States

- 426.1 **Toshiharu Shinoka**, Cardiothoracic Surgery, Nationwide Children's Hospital, Columbus, OH, United States
- 426.2 **Didier Letourneur**, Cardiovascular Bioengineering, Laboratory for Vascular Translational Sciences, Paris, France N/A

14:00 - 15:00

520c

427 - General Session

Biomaterials in mesenchymal and hematopoietic stem cell biology

Chairs: Jeffrey Jacot, Bioengineering, Rice University, Houston, TX, United States
Malgorzata Lewandowska-Szumiel, Medical University of Warsaw, Warszawa, Poland

- 14:00 427.1 Multifunctional nanoparticles for improving function and multimodal tracking of mesenchymal stem cells
Isaac M Adjei, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- 14:15 427.2 The study of cardiac differentiation of mesenchymal stem cells by electrostimulation on the myocardial repair
Shwu Jen Chang, Department of Biomedical Engineering, I-Shou University, Kaohsiung City, Taiwan
- 14:30 427.3 Exosomes and ECM as tools for inducing chondrogenic differentiation of somatic MSCs
Sriram Ravindran, Oral Biology, University of Illinois, Chicago, IL, United States
- 14:45 427.4 Role of sodium potassium pump in osteoinduction process of calcium phosphate ceramic
Zhurong Tang, National Engineering Research Center for Biomaterials, Chengdu, P.R. China

14:00 - 15:00

524

428 - General Session

Biomaterials for control of tissue induction

Chair: Lino S Ferreira, Center of Neurosciences and Cell Biology, Coimbra, Portugal

- 14:00 428.1 Photoclickable poly(ethylene glycol) hydrogels and mechanical loading for cartilage tissue engineering
Margaret C Schneider, Department of Chemical and Biological Engineering, University of Colorado-Boulder, Boulder, CO, United States
- 14:15 428.2 A multifactorial approach for enhancing extracellular matrix deposited by human chondrocytes
Valeria Graceffa, Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), National University of Ireland, Galway, Ireland
- 14:30 428.3 Cells sense the nanoscale geometry and mechanical properties of their matrix
Julien E Gautrot, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- 14:45 428.4 Engineering tissue substrates for generation of islet-like organoids from human pluripotent stem cell differentiation
Sha Jin, Biomedical Engineering Department, State University of New York in Binghamton, Vestal, NY, United States

15:00 - 16:30

220bcd

Poster Viewing Session 2B

See page 219

16:30 - 18:30

510a

430 - New Frontiers Symposium

Laser processing of biomaterials

Chairs: Roger Narayan, Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Raleigh, NC, United States
Aleksandr Ovsianikov, Institute of Materials Science and Technology (E308), Technische Universität Wien, Vienna, Austria
Fabio Variola, University of Ottawa, Ottawa, ON, Canada

- 16:30 430.1 Nanostructured biomaterials for medical and biological applications
Jackie Ying, Institute of Bioengineering and Nanotechnology, Singapore, Singapore
- 17:00 430.2 Cell-specific perforation using functionalized plasmonic nanoparticles and near-infrared femtosecond laser
Michel Meunier, Engineering Physics, Polytechnique Montreal, Montreal, QC, Canada
- 17:15 430.3 The use of stereolithography for native silk structuring
Anastasia Brif, Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom
- 17:30 430.4 Human bone marrow derived mesenchymal stem cells modulation by micro/nanostructured ATZ surfaces treated with femtosecond laser
Angela MP Carvalho, I3S / INEB / FEUP, Porto, Portugal
- 17:45 430.5 Needle-free protein delivery across the skin by photothermal effect of gold nanorods : using hydrogel system
Aung Thu Haine, Department of Applied Chemistry and Biochemistry, Bioengineering Laboratory, Kumamoto University, Kumamoto, Japan
- 18:00 430.6 Two-photon degradation of a hyaluronic acid based hydrogel using a two-photon initiator as photosensitizer
Markus Lunzer, Institute of Applied Synthetic Chemistry, Vienna University of Technology, Vienna, Austria
- 18:15 430.7 an evaluation of the effects of selective laser melting process parameters on the biocompatibility of ti-based implants
Trina Majumdar, Materials Science and Engineering Department, Monash University, Wantirna, Australia

16:30 - 18:15

510b

431 - New Frontiers Symposium

Living bioelectronics: enabling communication on the nanoscale

Chairs: Rylie Green, Graduate School of Biomedical Engineering, University of NSW, Sydney, Australia
 Roison Owens, Department of Bioelectronics, École Nationale Supérieure des Mines, CMP-EMSE, Gardanne, France
 Penny J Martens, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia

- 16:30 431.1 Design, synthesis, and characterization of conjugated polymers for integrating electronic biomedical devices with living tissue
David C Martin, Materials Science and Engineering, The University of Delaware, Newark, DE, United States
- 17:00 431.2 Covalent incorporation of biomolecules for improving functional properties of freestanding conductive hydrogels
Alexander J Patton, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia
- 17:15 431.3 Roll-to-roll fabrication of conductive polymer nanosheets for the development of ultraconformable skin-contact electrodes
Toshinori Fujie, Department of Life Science and Medical Bioscience, School of Advanced Science and Engineering, Waseda University, Tokyo, Japan
- 17:30 431.4 Nanostructured and biofunctionalized coatings for microscale electrodes: bringing cutting edge materials science to microsystems engineered implants
Maria Asplund, Biomedical Microtechnology, University of Freiburg, Freiburg, Germany
- 17:45 431.5 PEDOT:PSS macroporous electrode for electrochemical analysis of bacterial messengers
Julie Oziat, Department of Technologies for Life Science & Health Care, Commissariat à l'énergie atomique et aux énergies alternatives (CEA), Grenoble, France, Metropolitan
- 18:00 431.6 A photo-patternable and conductive hydrogel with covalent attachment to microelectrodes
Carolin Kleber, Department of Microsystems Engineering (IMTEK), University Freiburg, Freiburg, Germany

16:30 - 18:30

511e

432 - General Session

Bioconjugates and interfacial phenomena

Chairs: Anne E Meyer, School of Dental Medicine, University of Buffalo, Buffalo, NY, United States
 Matteo Santin, Brighton Centre for Regenerative Medicine, University of Brighton, Brighton, United Kingdom

- 16:30 432.1 Surface modification of microfluidic droplets
Weiqian Jiang, Columbia University, New York, NY, United States
- 16:45 432.2 Protein adsorption force on material surfaces plays vital roles in osteoblast adhesion
Manping Lin, College of Bioengineering, Chongqing University, Chongqing, P.R. China
- 17:00 432.3 Thermally-modulated stem cell purification using thermoresponsive ionic copolymer brush
Kenichi Nagase, Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan
- 17:15 432.4 Structuring and in-mould modification of PDMS surfaces for self-driven microfluidic channels
Ayodele Fatona, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada
- 17:30 432.5 Controlling the stability and protein adsorption of colloidal drug aggregates
Ahil N Ganesh, University of Toronto, Toronto, ON, Canada
- 17:45 432.6 Real-time study of silk assembly into stable coatings
Linnea Nilebäck, Division of Protein Technology, School of Biotechnology, KTH Royal Institute of Technology, Stockholm, Sweden N/A
- 18:00 432.7 Comparison of FXII contact activation with or without proteolytic cleavage
Christopher A Siedlecki, Surgery and Bioengineering, Penn State College of Medicine, Hershey, PA, United States
- 18:15 432.8 Water wettable silicone elastomer biomaterials surfaces
Yang Chen, Department of Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada

16:30 - 18:30

511f

433 - New Frontiers Symposium Engineered biomaterials for the management of bleeding and haemorrhage

Sponsored By:



- Chairs:* Jayachandran Kizhakkedathu, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada
Nathan J White, Emergency Medicine, University of Washington, Seattle, WA, United States
-
- 16:30 433.1 Hemostatic nanoparticles to stop internal bleeding
Erin B Lavik, University of Maryland, Baltimore, MD, United States
-
- 17:00 433.2 Doing damage control: the extreme demands that exsanguinating haemorrhage puts on both surgeons and engineers
Russell L Gruen, Nanyang Institute of Technology in Health and Medicine, Nanyang Technological University, Singapore, Singapore
-
- 17:15 433.3 Characterization and optimization of PolySTAT, an injectable hemostat for the treatment of traumatic injury
Robert J Lamm, Bioengineering, University of Washington, Seattle, WA, United States
-
- 17:30 433.4 Self-propelling particles that stop hemorrhage by transporting therapeutics through flowing blood
James R Baylis, Michael Smith Laboratories, University of British Columbia, Vancouver, BC, Canada
-
- 17:45 433.5 Synthetic platelet (SynthoPlate) technology enhances hemostasis in both prophylactic and emergency administration in mouse models of bleeding
Christa L Pawlowski, Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States
-
- 18:00 433.6 Accelerating coagulation in traumatic injuries using inorganic polyphosphate-coated silica nanoparticles
Damien Kudela, Chemistry, University of California, Santa Barbara, Santa Barbara, CA, United States
-
- 18:15 433.7 Platelet-like particles for wound-triggered hemostasis in patients at high risk for bleeding during cardiac surgery
Ashley C Brown, Biomedical Engineering, North Carolina State University and University of North Carolina at Chapel Hill, Raleigh, NC, United States

16:30 - 18:15

516a

434 - New Frontiers Symposium Regenerated organs and artificial organs

Chairs: Chandra P Sharma, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum, India
Lakshmi Nair, Orthopaedic Surgery, University of Connecticut Health, Farmington, CT, United States

-
- 16:30 434.1 Vascularized tissue and organ engineering
Michael V Sefton, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
-
- 17:00 434.2 Oxygen delivery augmented bone formation from transplanted bone marrow
Huaifa Zhang, Faculty of Dentistry, McGill University, Montreal, QC, Canada
-
- 17:15 434.3 Three dimensional microenvironments enable neuronal cultures with functionally relevant outcomes
Justin L Bourke, Department of Medicine, University of Melbourne, St. Vincent's Hospital, Fitzroy, Australia
-
- 17:30 434.4 Incorporation and delivery of two growth factors using bilayer nanofibrous scaffolds for gastrointestinal regeneration
Yu Zhou, The University of Hong Kong, Hong Kong, Hong Kong
-
- 17:45 434.5 3D-Printed gelatin scaffolds of differing pore size and geometry modulate hepatocyte function and gene expression
Phillip L Lewis, Biomedical Engineering, Northwestern University, Chicago, IL, United States
-
- 18:00 434.6 Development of bioactive membranes for bioartificial kidney
Dimitrios Stamatialis, Biomaterials Science and technology, University of Twente, Enschede, Netherlands N/A

16:30 - 18:30

516c

435 - General Session

Biomaterials for tissue substitutes: vascular tissue engineering

Chairs: Kimberly Woodhouse, Faculty of Engineering and Applied Science, Queen's University, Kingston, ON, Canada
William Wagner, McGowan Institute for Regenerative Medicine, Pittsburgh, PA, United States

- 16:30 435.1 Creating tissue-engineered blood vessels as disease models and drug screening platforms
Zaozao Chen, Biomedical Engineering, Columbia University, New York, NY, United States
- 16:45 435.2 Decellularized matrix grafts from placenta chorionic plate for small diameter vascular applications
Karl H Schneider, Biomaterials, Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna, Austria
- 17:00 435.3 A highly elastic and moldable polyester biomaterial for cardiac tissue engineering applications
Locke S Davenport Huyer, Chemical Engineering and Applied Chemistry, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 17:15 435.4 Engineering a 3D cardiac patch through cardiomyogenic differentiation of rMSCs by synchronous mechanical and electrical stimulations
Kezban Ulubayram, Department of Basic Pharmaceutical Sciences, Department of Nanotechnology and Nanomedicine, Department of Bioengineering, Hacettepe University, Ankara, Turkey
- 17:30 435.5 Multifunctional fibrin/PEG hydrogels for the cardiac differentiation of reprogrammed amniotic fluid derived stem cells for congenital heart repair
Christopher JM Tsao, Bioengineering, Rice University, Houston, TX, United States
- 17:45 435.6 Transdifferentiation of human endothelial progenitors into functional smooth muscle cells for tissue engineered blood vessel assembly
Hayeun Ji, Biomedical Engineering, Columbia University, New York, NY, United States
- 18:00 435.7 Design and endothelization of artificial blood vessels inside large bodies of bacterial cellulose hydrogels
Fernanda Vieira Berti, InteLab, Federal University of Santa Catarina, Florianópolis, Brazil
- 18:15 435.8 The development of a facile polymer microbead-based approach to promoting angiogenesis in dense epithelial tissue
Marianna Sofman, Biological Engineering, MIT, Cambridge, MA, United States

16:30 - 18:30

517a

436 - New Frontiers Symposium

Bioinspired materials and devices for regenerative medicine

Sponsored By:



- Chairs:* Jose Luis Gomez Ribelles, Centre for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Valencia, Spain
Xin Zhang, Biomaterials Research Department, Institute of Processing Engineering, Chinese Academy of Sciences, Beijing, P.R. China
- 16:30 436.1 Resorbable muscle-tendon junction scaffold with tunable porosity and mechanical properties
Ting He, College of Textiles, North Carolina State University, Raleigh, NC, United States
- 16:45 436.2 Citric acid triggered intrafibrillar and interfibrillar mineralization of osteoid-like dense collagen gels
Wenge Jiang, Department of Mining and Materials Engineering, McGill University, Montreal, QC, Canada
- 17:00 436.3 Behaviour of hMSC cultured on piezoelectric quasi-3D substrates: growth and osteogenic differentiation
Jose Luis Gomez Ribelles, Centre for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Valencia, Spain
- 17:15 436.4 Zone-specific collagen alignment in porous polymer scaffolds for articular cartilage tissue engineering
Joseph AM Steele, Biomaterials Division, Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden
- 17:30 436.5 Nature-inspired graft-copolymers as new promising biolubricants for articular cartilage
Giulia Morgese, Department of Materials, ETH Zürich, Zürich, Switzerland
- 17:45 436.6 Biomimetic scaffold with stem cell derived smooth muscle cells: a designer vascular substitute
Neelima Thottappillil, Division of Tissue Engineering and Regeneration Technology, Biomedical Technology Wing, Sree Chitra Tirunal Institute for Medical Sciences and Technologies, Trivandrum, India
- 18:00 436.7 Cellulose based micro- nano structured scaffolds for bone regeneration
Aja Aravamudhan, Department of Orthopedic Surgery, University of Connecticut Health Center, Farmington, CT, United States
- 18:15 436.8 Development of novel scl-mcl polyhydroxyalkanoates blends for soft tissue engineering
Barbara Lukaszewicz, University of Westminster, London, United Kingdom

16:30 - 18:15

518

437 - New Frontiers Symposium

Biomedical imaging and theranostics: biomaterial design and applications

Chairs: **Aiguo Wu**, Functional Materials & Nanodevices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, P.R. China

Hua Ai, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China

16:30 437.1 Design of targeted MRI contrast agents for early cancer detection
Zhengrong Lu, Case Western Reserve University, Cleveland, OH, United States

16:45 437.2 Cancer-targeted short-wave infra-red emitting rare-earth albumin nanocomposites for lesion mapping and deep-tissue imaging
Prabhas V Moghe, Biomedical Engineering, Rutgers University, Piscataway, NJ, United States

17:00 437.3 MRI probes for dendritic cell labeling and in vivo tracking
Hua Ai, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China

17:15 437.4 Leveraging magneto-acoustic gene microplatform for concurrent gene therapy and early ultrasonographic prediction of therapeutic response in tumor-bearing mice
Beata Chertok, Pharmaceutical Sciences, University of Michigan, Ann Arbor, MI, United States

17:30 437.5 Dual-channel near-infrared fluorescent thiol-activatable theranostic prodrug for in vivo real-time tracking chemotherapy
Jianbin Tang, College of Chemical and Biological Engineering, Zhejiang University, Zhejiang, P.R. China

17:45 437.6 Ischemia/reperfusion targeted nanotheranostics using H2O2-triggered bubble generating antioxidant polymeric nanoparticles
Dongwon Lee, Polymer Nano Science and Technology, Chonbuk National University, Jeonju, Korea

18:00 437.7 Impact of carbon monoxide releasing molecule loading and electrospun scaffold composition on engineered vascular constructs
Kenyatta S Washington, Biomedical Engineering, Florida Institute of Technology, Palm Bay, FL, United States

16:30 - 18:15

519

438 - General Session

Composites: polymeric, ceramic and metallic

Chairs: **Seiji Yamaguchi**, College of Life and Health Sciences, Chubu University, Kasugai, Japan
Yanzhong Zhang, Department of Bioengineering, Donghua University, Shanghai, P.R. China

16:30 438.1 Hybrid polyurethane scaffolds interpenetrated with newly cross-linked gelatin for adipose tissue regeneration
Silvia Fare, Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy

16:45 438.2 The influence of bioactive glass and the released Ca²⁺ ions on fibroin scaffolds properties: secondary structure, mechanical properties and degradation
Natasa Drnovsek, Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia

17:00 438.3 Photo-polymerized composite alginate hydrogels: synthesis and characterization
Lisbeth Grondahl, School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Australia

17:15 438.4 Dual setting calcium phosphate/fibroin cements
Uwe Gbureck, Department for Functional Materials in Medicine and Dentistry, University Hospital Würzburg, Würzburg, Germany

17:30 438.5 Electrospun silica/poly(γ -glutamate) hybrid fibremats for bone regeneration
Akiko Obata, Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Japan

17:45 438.6 Characterization of alginate-polypropylene composites for tissue engineering scaffolds
Cassandra J Wright, Division of Engineering and Mathematics, University of Washington Bothell, Bothell, WA, United States

18:00 438.7 Effect of powder fabrication process on microstructure and mechanical properties of selective laser melted metals for biomedical applications
Naoyuki Nomura, Department of Materials Processing, Tohoku University, Sendai, Japan

16:30 - 17:30

520b

439 - Clinical Session: From Clinic to Bench Case Study 2: Tissue-engineered cartilage constructs

Chairs: *Johnna Temenoff, Biomedical Engineering, Georgia Tech/Emory University, Atlanta, GA, United States*
Justin J Cooper-White, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, Brisbane, Australia

- 439.1 **Yilin Cao**, Department of Plastic and Reconstructive Surgery, Shanghai 9th People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, P.R. China N/A
- 439.2 **Jennifer H Elisseeff**, Johns Hopkins University School of Medicine, Baltimore, MD, United States N/A

17:30 - 18:30

520b

440 - Clinical Session: From Clinic to Bench Case Study 3: Regenerative medicine enabled by growth factors and biomaterial scaffolds

Chairs: *Sean AF Peel, Induce Biologics Inc., Toronto, ON, Canada*
Stuart B Goodman, Orthopaedic Surgery and Bioengineering, Stanford University, Redwood City, CA, United States

- 440.1 **Ashraf Farouk Ayoub**, Clinical Dentistry, University of Glasgow, Glasgow, United Kingdom N/A
- 440.2 **Liisa Kuhn**, University of Connecticut Health Center, Farmington, CT, United States N/A

16:30 - 18:30

520c

441 - New Frontiers Symposium Neuroengineering: biomaterials-based approaches for modulating the neural microenvironment

Chairs: *Sarah E Stabenfeldt, School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, United States*
David Nisbet, Research School of Engineering, The Australian National University, Acton, Australia

- 16:30 441.1 Combined self-assembling peptide hydrogels and electrospun nanofibres for improved biomimicry and temporally controlled drug delivery
Kiara Bruggeman, Research School of Engineering, The Australian National University, Canberra, Australia
- 16:45 441.2 Oligodendrocyte survival, proliferation, and maturation is dependent on 3D hydrogel mechanics
Kyle Lampe, Chemical Engineering, University of Virginia, Charlottesville, VA, United States
- 17:00 441.3 Schwann Cell—laden PVDF-TrFE conduits for spinal cord repair
Yee-Shuan Lee, The Miami Project to Cure Paralysis, University of Miami, Miami, FL, United States
- 17:15 441.4 Selective nanovector mediated treatment of activated microglia in spinal cord injury
Filippo Rossi, Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Milan, Italy
- 17:30 441.5 Targeting the neural injury microenvironment
Sarah E Stabenfeldt, School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, United States
- 17:45 441.6 Spatial and temporal control of GDNF delivery from acellular nerve grafts and Schwann cells improves regeneration across a long nerve defect
Shelly Sakiyama-Elbert, Biomedical Engineering, Washington University, St. Louis, MO, United States
- 18:00 441.7 Advanced therapeutic medicinal product for promoting nerve regeneration
Srinivas Madduri, ETH Zurich, Zurich, Switzerland
- 18:15 441.8 Local delivery of brain-derived neurotrophic factor following stroke
Jaclyn M Obermeyer, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada

16:30 - 18:30

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442 - New Frontiers Symposium Tissue-specific delivery strategies for mesenchymal stem cells

Chairs: *Brian G Amsden, Chemical Engineering, Queen's University, Kingston, ON, Canada*
Lauren E Flynn, Chemical & Biochemical Engineering, The University of Western Ontario, London, ON, Canada

- 16:30 442.1 Materials-based approaches for regenerative medicine
Molly Stevens, Departments of Materials and Bioengineering, Imperial College London, London, United Kingdom
- 17:00 442.2 A shape-controlled tunable microgel cell delivery platform for low-dose delivery of primed stem cells for in vivo therapeutic neovascularization
Dilip Thomas, CÚRAM, National University of Ireland Galway, Galway, Ireland
- 17:15 442.3 A modular cell delivery platform that supports neovascularization and early myogenesis
Amit Aurora, Extremity Trauma and Regenerative Medicine, U.S. Army Institute of Surgical Research, Ft. Sam Houston, TX, United States
- 17:30 442.4 Porous decellularized extracellular matrix microcarriers for tissue-specific cell expansion and delivery
Claire Yu, Chemical Engineering, Queen's University, London, ON, Canada
- 17:45 442.5 Microparticle-mediated presentation of cytokines to direct mesenchymal stem cell immunomodulation
Todd C Mcdevitt, Gladstone Institute of Cardiovascular Disease, Gladstone Institutes, San Francisco, CA, United States
- 18:00 442.6 Engineered mesenchymal stem cell anisotropic tissue for potential muscle regeneration
Feng Zhao, Biomedical Engineering, Michigan Technological University, Houghton, MI, United States
- 18:15 442.7 Mechanically tunable hydrogels for delivery of adipose derived stem cells
Andrew Carroll, Queen's University, Toronto, ON, Canada

20:00 - 02:00

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DAY-AT-A-GLANCE

SUNDAY, MAY 22, 2016

07:30 - 17:30	Viger Hall - L200	Registration Desk	Registration open
		Exhibits	Exhibits closed
08:00 - 09:00	517a	Social Event	Canadian Pancake Breakfast (open to all delegates and registered companions)
09:00 - 10:00	517bcd	500 Plenary	Plenary Session 5 - David Tirrell
10:00 - 10:30	Foyer 517	Coffee Break	Coffee Break
10:30		Concurrent Sessions	
10:30 - 12:00	510a	501 New Frontiers Symposium	Convergence of biomaterials science and additive biomanufacturing
10:30 - 12:30	510b	502 New Frontiers Symposium	Bioinspired adhesive materials
10:30 - 11:45	511e	503 General Session	Biomaterials for therapeutic delivery: general
10:30 - 12:30	511f	504 General Session	Enabling RNAi with biomaterials
10:30 - 12:15	515	505 General Session	Biomaterials in musculoskeletal repair: hard tissues
10:30 - 12:15	516a	506 New Frontiers Symposium	Bioceramics inducing osteogenesis, angiogenesis and immunomodulation
10:30 - 12:15	516c	507 General Session	Biomaterials in constructing tissue substitutes
10:30 - 12:30	517a	508 New Frontiers Symposium	Organ-on-a-chip engineering
10:30 - 11:45	518	509 General Session	Biomaterials in thrombosis and hemostasis
10:30 - 12:30	519	510 General Session	Surfaces and interfaces: engineering
10:30 - 12:00	520b	511 New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
10:30 - 12:15	520c	512 New Frontiers Symposium	Emerging molecular strategies for the prevention of device infections
10:30 - 12:00	524	513 New Frontiers Symposium	Injectable biomaterials for cell therapy and tissue engineering
12:00 - 14:00	710	Lunch Break	Lunch
12:00 - 13:45	512	Career Networking	12:00-13:45 - Career Networking (Please select your advisor and topic in the Student Corner as of May 17)
12:00 - 12:45	512	Career Networking	Group 1
13:00 - 13:45	512	Career Networking	Group 2
14:00		Concurrent Sessions	
14:00 - 15:45	510a	514 New Frontiers Symposium	Convergence of biomaterials science and additive biomanufacturing
14:00 - 15:30	510b	515 New Frontiers Symposium	Bioinspired adhesive materials
14:00 - 15:45	511e	516 General Session	Biomaterials for cancer therapy
14:00 - 16:00	511f	517 General Session	Biomaterials for cardiovascular applications: vascular repair
14:00 - 15:45	515	518 General Session	Biomaterials in musculoskeletal repair: soft tissues
14:00 - 15:30	516a	519 New Frontiers Symposium	Bioceramics inducing osteogenesis, angiogenesis and immunomodulation
14:00 - 16:00	516c	520 General Session	Biomaterials for tissue substitutes
14:00 - 16:00	517a	521 New Frontiers Symposium	Engineered biomaterials for the management of bleeding and haemorrhage
14:00 - 15:45	518	522 New Frontiers Symposium	Bioelectrical field: from petri dish to tissue regeneration
14:00 - 16:00	519	523 General Session	Surfaces and interfaces: characterization
14:00 - 16:00	520b	524 New Frontiers Symposium	Bioinspired materials and devices for regenerative medicine
14:00 - 16:00	520c	525 New Frontiers Symposium	Emerging molecular strategies for the prevention of device infections
14:00 - 15:45	524	526 New Frontiers Symposium	Injectable biomaterials for cell therapy and tissue engineering
16:00 - 16:20	517a	527	Closing Ceremonies

MS MASTER OF SCIENCE PROGRAM IN BIOMATERIALS SCIENCE



New York University recently established state-of-the-art biotechnology programs with a focus on efforts that integrate the life sciences with physical, bioengineering, and computational science. The NYU Biomaterials Program has significant strengths in biosensors, 3D bio-printing, bio-imaging, bone-soft tissue interfaces, bio-inspired materials synthesis, dental implants, and biomechanics, among other research areas. These programs create bridges among nanotechnology, medicine, dentistry, nursing, and bio-engineering by emphasizing the development of a new biomaterials base for enhanced human health.



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- Bio-inspired surface modifications and materials synthesis
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- Bulk nanometric material synthesis
- Mechanics of materials
- Inorganic analysis

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- X-ray Imaging and X-ray Diffraction
- Light Microscopy
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- Materials Characterization
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Application deadline: July 1st for Fall admission

**Application fee waived if you mention this ad.*

DETAILED PROGRAM

SUNDAY, MAY 22, 2016

07:30 - 16:30

Viger Hall - 200 level

Registration open

Exhibits and posters closed

08:00 - 09:00

Foyer 517

Social Event

Canadian Pancake Breakfast

Open to all participants

09:00 - 10:00

517bcd

500 - Plenary

Plenary Session 5

Chairs: Xingdong Zhang, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
Isabelle Catelas, Mechanical Engineering, University of Ottawa, Ottawa, ON, Canada

- 500.1 Non-canonical amino acids in protein science and engineering
David Tirrell, Chemical Engineering, Caltech, Pasadena, CA, United States

10:00 - 10:30

Foyer 517

Coffee Break

10:30 - 12:00

510a

501 - New Frontiers Symposium

Convergence of biomaterials science and additive biomanufacturing

Chairs: Takayoshi Nakano, Division of Materials & Manufacturing Science, Division of Materials & Manufacturing Science, Osaka University, Suita, Japan
Dietmar W Huttmacher, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia
Hui-suk Yun, Powder & Ceramics Division, Korean Institute of Materials Science, Changwon, Korea

- 10:30 501.1 Advanced researches of additive manufacturing for medicine in Japan
Takao Hanawa, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

- 11:00 501.2 3D tissue printing
Jennifer Lewis, Harvard John A Paulson School of Engineering & Applied Sciences, Cambridge, MA, United States
- 11:30 501.3 Human hair keratin templates for biomedical applications
Kee Woei Ng, School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore
- 11:45 501.4 In vitro degradation and cytocompatibility of PLA-PCL copolymer unit cell scaffolds
Reda M Felfel, Mechanical, Materials and Manufacturing Engineering, University of Nottingham, Nottingham, United Kingdom

10:30 - 12:30

510b

502 - New Frontiers Symposium

Bioinspired adhesive materials

Chairs: Yoshihiro Ito, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan
Haeshin Lee, Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

- 10:30 502.1 Biological polyphenols as inspiration for biomedical adhesives and coatings
Phillip Messersmith, Bioengineering, University of California, Berkeley, CA, United States
- 11:00 502.2 Elastin-based underwater adhesive
Julie Liu, Chemical Engineering, Purdue University, West Lafayette, IN, United States N/A
- 11:15 502.3 New sources of bioinspiration: adhesive proteins of freshwater mussels
Eli D Sone, Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- 11:30 502.4 Catechol-modified biomolecules in layer-by-layer assembly: a fishing net-like model to enhance stability and long-term performance
Rifang Luo, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- 11:45 502.5 Mussel-inspired adhesive epidermal growth factor for biological surface modification
Hongli Mao, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan
- 12:00 502.6 Catechol-derived sealant biomaterials at air-water interfaces
Haeshin Lee, Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
- 12:15 502.7 Design and synthesis of new binding growth factors
Yoshihiro Ito, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan

10:30 - 11:30

511e

503 - General Session

Biomaterials for therapeutic delivery: general

Chairs: Peter Edelman, Research & Development, Boston Scientific, Maple Grove, MN, United States
William G Pitt, Chemical Engineering, Brigham Young University, Provo, UT, United States

- 10:30 503.1 Microfabricated immune-isolating devices for transplanting therapeutic cells in vivo
Suman Bose, Koch Institute of Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, United States
- 10:45 503.2 Dendritic pro-drug for local and selective treatment of locally advanced breast cancer
Nuria Oliva Jorge, IMES/HST, Massachusetts Institute of Technology, Cambridge, MA, United States
- 11:00 503.3 Fabrication and magnetic control of alginate-based cellular micro robots
Jamel Ali, Mechanical Engineering and Mechanics, Drexel University, Philadelphia, PA, United States
- 11:15 503.4 Microgels as vehicles for effective delivery of hydrophilic drugs to the brain
Madeline J Simpson, Chemical Engineering, McMaster University, Hamilton, ON, Canada

10:30 - 12:30

511f

504 - General Session

Enabling RNAi with biomaterials

Chairs: Natalie Artzi, Biomedical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States
Daniel Siegwart, Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

- 10:30 504.1 Lipocationic polyesters from ring-opening polymerization of functional lactones for efficacious siRNA delivery
Daniel Siegwart, Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas, TX, United States
- 10:45 504.2 MicroRNA delivery via poly(beta-amino ester) nanoparticles as a treatment for human glioblastoma
Kristen L Kozielski, Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States
- 11:00 504.3 Cationic switchable lipids : pH-sensitive lipid nanoparticle based on a molecular switch for siRNA delivery
Warren Viricel, Faculty of Pharmacy of Montreal, University of Montreal, Montreal, QC, Canada
- 11:15 504.4 Localized and sustained delivery of small interference RNA (siRNA) from poly(Ethylene Glycol) (PEG) hydrogels to enhance fracture healing
Yuchen Wang, Biomedical Engineering, University of Rochester, Rochester, NY, United States
- 11:30 504.5 Development of RNAi technology to selectively inhibit mTORC2 in breast cancer
Thomas A Werfel, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States
- 11:45 504.6 Non-viral (polymeric) delivery of combinational siRNAs against cell cycle and phosphatase proteins to prevent metastasis in breast cancer
Manoj Parmar, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada
- 12:00 504.7 RAFT polymer delivered siRNA therapeutics to inhibit influenza virus replication
Thilak Gunatillake, Biomedical Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
- 12:15 504.8 The systematic design and biophysical evaluation of cationic sulfonamide aminolipids for siRNA delivery
Jason B Miller, Biochemistry Department, Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas, TX, United States

10:30 - 12:15

515

505 - General Session

Biomaterials in musculoskeletal repair: hard tissues

Chairs: **Marc Grynbas**, Lunenfeld-Tanenbaum Research Institute of Mount Sinai Hospital, Toronto, ON, Canada
Marija Vukomanović, Advanced Materials Department, Jožef Stefan Institute, Ljubljana, Slovenia

- 10:30 505.1 The effect of diamond like carbon coating on fretting corrosion and wear at the modular head-stem junction of metal on metal total hip replacements
Anna Panagiotidou, Biomedical Engineering, University College London, Middlesex, United Kingdom
- 10:45 505.2 Quantification of osteoclastic resorption of 3D biomaterials: towards better in vitro models for biomaterial degradation in vivo
Anne Bernhardt, Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Dresden, Germany
- 11:00 505.3 The proangiogenic potential of a novel poly(lactic) based composite biomaterial for guided bone regeneration
Hugo Oliveira, Institut National de la Santé et de la Recherche Médicale (INSERM) U1026 Biotis, Bordeaux, France
- 11:15 505.4 Peptide-functionalized polymers localize to remodeling osteoporotic bone
Maureen R Newman, Biomedical Engineering, University of Rochester, Rochester, NY, United States
- 11:30 505.5 Screw pull out under cyclic fatigue loading in synthetic, cadaveric, and canine bone
Alan S Litsky, Depts of Orthopaedics and Biomedical Engineering, Ohio State University, Columbus, OH, United States
- 11:45 505.6 Porous titanium for orthopedic applications: fabrication, characterization and biological assessment
Kausik Kapat, School of Medical Science and Technology, Indian Institute of Technology Kharagpur, Kharagpur, India
- 12:00 505.7 In vivo evaluation of the influence of bioceramics architectural features on the angiogenesis and bone formation
Baptiste Charbonnier, Centre Ingénierie et Santé, École Nationale Supérieure des Mines de Saint-Étienne, Saint-Étienne, France

10:30 - 12:15

516a

506 - New Frontiers Symposium

Bioceramics inducing osteogenesis, angiogenesis and immunomodulation

Chairs: **Chengtie Wu**, Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China
Ahmed Ei-Ghannam, Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte, Charlotte, NC, United States

- 10:30 506.1 Osteoimmunomodulation for the development of advanced bone biomaterials
Yin Xiao, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia
- 11:00 506.2 Biomaterial-mediated modulation of macrophage behavior to promote bone regeneration
Pamela L Graney, Department of Biomedical Engineering, Drexel University, Philadelphia, PA, United States
- 11:15 506.3 Simultaneous tumor-photothermal therapy and bone-tissue regeneration by a bifunctional 3D-printing bioceramic scaffold
Chengtie Wu, Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China
- 11:30 506.4 Macrophage type modulates osteogenic differentiation of adipose tissue MSCs
Yang Zhang, Department of Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands
- 11:45 506.5 Effect of a rapidly resorbable calcium alkali phosphate bone grafting material on bone formation and osteogenic marker expression after sinus floor augmentation in humans
Christine Knabe-Ducheyne, Department of Experimental Orofacial Medicine, Philipps University Marburg, Marburg, Germany
- 12:00 506.6 How strontium-substitution of calcium phosphate bone cements affects their resorption by osteoclasts
Matthias Schumacher, Centre for Translational Bone, Joint and Soft Tissue Research, Technische Universität Dresden, Dresden, Germany

10:30 - 12:15

516c

507 - General Session Biomaterials in constructing tissue substitutes

Chairs: **Ameer Guillermo**, Biomedical Engineering Department and Department of Surgery, Northwestern University, Evanston, IL, United States
Stephanie Proulx, Ophthalmology, Université Laval, Québec, QC, Canada

10:30 507.1 Enhancing hepatic functions of human induced pluripotent stem cells-derived hepatocytes and their engraftment in immunocompetent mice via 3D co-aggregation and encapsulation
Wei Song, Biological and Environmental Engineering, Cornell University, Ithaca, NY, United States

10:45 507.2 Tissue-engineered constructs preservation using a novel slow vitrification method with hydrophobically modified polyampholyte to inhibit ice crystallization
Kazuaki Matsumura, School of Materials Science, Japan Advanced Institute of Science and Technology, Ishikawa, Japan

11:00 507.3 Renal extracellular matrix-derived hydrogels for cell culture
Jimmy Su, Biomedical Engineering, Northwestern University, Chicago, IL, United States

11:15 507.4 Cell sheet-based tissue engineering for organizing anisotropic muscle tissue constructs produced using microfabricated thermoresponsive materials
Hironobu Takahashi, Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan

11:30 507.5 Culturing and detection of gene expression of transforming growth factor beta type II receptor expressing progenitor cells on textile scaffolds fabricated from resorbable PLLA
Harshini Ramakrishna, College of Textiles, TECS, North Carolina State University, Raleigh, NC, United States

11:45 507.6 Facile synthesis of nano-composite double network hybrid hydrogels via UV polymerisation for cartilage tissue engineering applications, with functionalised silica nanoparticles as macro-crosslinkers
Ali Mohammed, Material Sciences, Imperial College London, London, United Kingdom

12:00 507.7 Hydrogel from bovine decellularized ovarian extracellular matrix supports mouse follicle survival in vitro
Julie Vanacker, Louvain Drug Research Institute / Advanced Drug Delivery and Biomaterials Unit, Université catholique de Louvain, Brussels, Belgium

10:30 - 12:30

517a

508 - New Frontiers Symposium Organ-on-a-chip engineering

Sponsored By:



Chairs: **Craig A Simmons**, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
Milica Radisic, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
Christopher Moraes, Chemical Engineering, McGill University, Montreal, QC, Canada

10:30 508.1 Microscale bioengineering of chronic diseases
Shuichi Takayama, Department and Macromolecular Science and Engineering Program, University of Michigan, Ann Arbor, MI, United States

11:00 508.2 On-chip human microvasculature for real-time visualization and quantification of tumor cell extravasation and early metastatic seeding
Michelle B Chen, Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States

11:15 508.3 AngioChip: a biodegradable scaffold with built-in vasculature for organ-on-a-chip engineering and direct surgical anastomosis
Boyang Zhang, University of Toronto, Toronto, ON, Canada

11:30 508.4 Microtissue array to screen the impact of carbon nanotube on lung cellular and tissue biomechanics
Ruogang Zhao, Biomedical Engineering, State University of New York at Buffalo, Buffalo, NY, United States

11:45 508.5 A microfabricated platform with hydrogel arrays and on-chip strain sensing for mechanical stimulation of 3D cell-seeded hydrogels
Haijiao Liu, Mechanical and Industrial Engineering, University of Toronto, Toronto, ON, Canada

12:00 508.6 Distributed hydrogel mechanosensors to measure internal forces in engineered tissues
Wontae Lee, Department of Chemical Engineering, McGill University, Montreal, QC, Canada

12:15 508.7 Microfluidic cell culture model of the ocular fundus
Li Jiun Chen, Tohoku University, Sendai, Japan

10:30 - 11:45

518

509 - General Session

Biomaterials in thrombosis and hemostasis

Chairs: Scott A Irvine, School of Materials Science and Engineering, Nanyang Technological University Singapore, Singapore
Balakrishnan Sivaraman, Pumps Platform/MCS, St. Jude Medical (formerly Thoratec Corporation), Burlington, MA, United States

10:30 509.1 Cobalt-chromium, used as stent material, triggers the activation of platelets, coagulation, leukocytes and endothelial cell dysfunction in vitro

Veronique Ollivier, LVTS U1148, Institut National de la Santé et de la Recherche Medicale (INSERM), Paris, France

10:45 509.2 Anti-thrombotic properties of a CD31-derived peptide coated on a surface

Charlotte Rasser, Institut National de la Santé et de la Recherche Medicale (INSERM) U1148, Paris, France

11:00 509.3 Transfusion with synthetic platelet substitutes, H12-(ADP)liposomes, effectively rescues thrombocytopenic rabbits from massive hemorrhage

Masato Takikawa, Department of Advanced Science and Engineering, Waseda University, Tokyo, Japan

11:15 509.4 Activation of blood clotting on cationic biomaterials via factor VII activating protease (FSAP)

Claudia Sperling, Max Bergmann Center, Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany

11:30 509.5 Hemocompatibility of hyaluronan-enhanced linear low-density polyethylene surfaces for heart valve leaflet applications

Ketul C Popat, Mechanical Engineering, Colorado State University, Fort Collins, CO, United States

10:30 - 12:30

519

510 - General Session

Surfaces and interfaces: engineering

Chairs: Bolfarini Claudemiro, Materials Engineering, Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
Yannis Missirlis, University of Patras, Patras, Greece

10:30 510.1 Surface functionalization of titanium surfaces grafted with hyaluronic acid through alendronate self-assembling monolayers
Sanjukta Deb, Tissue Engineering & Biophotonics, King's College London Dental Institute, London, United Kingdom

10:45 510.2 Bioactive glass-ceramic coating of titanium substrates by alkaline hydrothermal processing

Amin S Rizkalla, Chemical and Biochemical Engineering, The University of Western Ontario, London, ON, Canada

11:00 510.3 Understanding and engineering parameters for biocompatible, thermoresponsive polymer coatings and temperature triggered cell adhesion and detachment

Silke Heinen, Institut für Chemie und Biochemie, Freie Universität Berlin, Berlin, Germany

11:15 510.4 Random acrylate copolymer surface grafting to poly (dimethyl siloxane) elastomer surfaces with varying graft molecular weight for improved anti-biofouling

Cary A Kuliasha, Materials Science and Engineering, University of Florida, Gainesville, FL, United States

11:30 510.5 Methanol plasma treatment of fluorocarbon ultra-thin films for stents applications

Livia Angeloni, Lab. Biomaterials and Bioengineering, CRC-I, Dept Min-Met-Materials Eng & CHU de Québec Research Center, Laval University, Québec, QC, Canada

11:45 510.6 Surface modification of L605 by oxygen plasma immersion ion implantation

Carlo Paternoster, Université Laval, Québec, QC, Canada

12:00 510.7 In situ fabrication of biphasic-induced magnetic nano-hydroxyapatite chitosan-based composite microcapsules for bone regeneration

Jingdi Chen, Institute of Biomedical and Pharmaceutical Technology, Fuzhou University, Fuzhou, P.R. China

12:15 510.8 Atomic-scale osseointegration in human revealed by atom probe tomography

Kathryn Grandfield, Materials Science and Engineering, McMaster University, Hamilton, ON, Canada

10:30 - 11:45

520b

511 - New Frontiers Symposium Bioinspired materials and devices for regenerative medicine

Sponsored By:



- Chairs:* *Joao F Mano, Department of Chemistry, Aveiro Institute of Materials (CICECO), University of Aveiro, Aveiro, Portugal*
George Petrov Altankov, Molecular Dynamics at Cell-Biomaterials Interface, Institute for Bioengineering of Catalonia, Barcelona, Spain
-
- 10:30 511.1 Biomimetic peptide nanofibers enhanced thermo-sensitive hydrogel for bone regeneration
Changsheng Chen, Key Laboratory of Biomedical Materials and Implant Devices, Research Institute of Tsinghua University in Shenzhen (RITS), Shenzhen, P.R. China
-
- 10:45 511.2 Fabrication and characterization of unique self assembling cornea-mimetic Collagen biomaterials
Shoumyo Majumdar, Translational Tissue Engineering Center, Johns Hopkins University, Baltimore, MD, United States
-
- 11:00 511.3 Self-assembling peptides and proteins into dynamic, functional, adhesive, and self-healing structures
Alvaro Mata, Queen Mary University of London, London, United Kingdom
-
- 11:15 511.4 Novel chitosan microspheres for capturing human bone marrow mesenchymal stem cells
Han Sun, The First Affiliated Hospital of Soochow University, Suzhou, P.R. China
-
- 11:30 511.5 Robust and bioadhesive supramolecular hydrogel stabilized by pre-assembled host-guest complexation for in situ tissue regeneration
Qian Feng, Biomedical Engineering, The Chinese University of Hong Kong, Hong Kong, Hong Kong

10:30 - 12:15

520c

512 - New Frontiers Symposium Emerging molecular strategies for the prevention of device infections

Chairs: *Helmut Thissen, Manufacturing Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia*
Henning Menzel, Institute for Technical Chemistry, Braunschweig University of Technology, Braunschweig, Germany

- 10:30 512.1 Anti-infection strategies for biomaterials surfaces - not always about counting numbers of adhering microbes
Henk Busscher, Biomedical Engineering, University Medical Center Groningen, Groningen, Netherlands
-
- 11:00 512.2 High throughput methods for exploring bacterial-material interactions
Andrew L Hook, Laboratory of Biophysics and Surface Analysis, University of Nottingham, Nottingham, United Kingdom
-
- 11:15 512.3 Nitric oxide (NO) releasing catheters to reduce thrombosis and bacterial infection
Hitesh Handa, Biological Engineering, University of Georgia, Athens, GA, United States
-
- 11:30 512.4 Self-binding polymers as antibacterial coatings for metallic and ceramic implants
Henning Menzel, Institute for Technical Chemistry, Braunschweig University of Technology, Braunschweig, Germany
-
- 11:45 512.5 Controlled bacteriophage release from poly(ethylene glycol) hydrogels significantly reduces infection in a bone implant-associated infection model
Christopher T Johnson, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
-
- 12:00 512.6 Multifunctional poly(ethylene glycol)-based platform coating incorporating a quorum sensing inhibitor for antimicrobial applications
Berkay Ozelik, Manufacturing Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia

10:30 - 12:00

524

513 - New Frontiers Symposium Injectable biomaterials for cell therapy and tissue engineering

Chairs: Pierre Weiss, Dental Biomaterial, University of Nantes, Institut National de la Santé et de la Recherche Médicale (INSERM), Nantes, France
Faleh Tamimi, Faculty of Dentistry, McGill University, Montreal, QC, Canada

- 10:30 513.1 Affinity-based growth factor delivery system for tissue engineering
Linyang Yu, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- 10:45 513.2 Astrocyte migration in injectable gelatin-hydroxyphenyl propionic acid matrices for neuronal guidance in spinal cord injury
Josna Joseph, Tissue Engineering, VA Boston Healthcare System, Harvard Medical School, Boston, MA, United States
- 11:00 513.3 Design of reloadable in situ forming implants for delivery of doxorubicin
Christopher Hernandez, Biomedical Engineering, Case Western Reserve University, Cleveland Heights, OH, United States
- 11:15 513.4 2D magnesium phosphate nanosheets form highly thixotropic material that up-regulate bone formation
Faleh Tamimi, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- 11:30 513.5 Injectable bone regeneration biomaterial with analgesic properties
Ahmed E Al Subaie, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- 11:45 513.6 The use of clay nanoplatelets to improve hydrogels for tissue engineering applications
Lyndon F Charles Jr, Institution for Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge, MA, United States

12:00 - 14:00

710

Lunch

14:00 - 15:45

510a

514 - New Frontiers Symposium Convergence of biomaterials science and additive biomanufacturing

Chairs: Takayoshi Nakano, Division of Materials & Manufacturing Science, Division of Materials & Manufacturing Science, Osaka University, Suita, Japan
Dietmar W Huttmacher, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia
Takao Hanawa, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

- 14:00 514.1 From bioactive implant surface coating to bioengineered tissue: the future of breast implants
Jan-Thorsten Schantz, Technische Universitaet Muenchen, Munich, Germany
- 14:30 514.2 Solvent-cast 3D printing of chitosan hydrogel scaffolds for guided cell growth
Qinghua Wu, Chemical Engineering, École Polytechnique de Montréal, Montréal, QC, Canada
- 14:45 514.3 Extrusion-based printing of poly(propylene fumarate) for osteochondral tissue engineering
Jordan E Trachtenberg, Bioengineering, Rice University, Houston, TX, United States
- 15:00 514.4 3D printing biomimetic nanomaterials for highly efficient vascularized bone development
Benjamin Holmes, MAE Biomaterials and Nanomedicine, George Washington University, Sonostik LLC, Washington, DC, United States
- 15:15 514.5 Direct writing electrospinning of scaffolds with multi-dimensional fiber architecture for hierarchical tissue engineering
Afonso B Malheiro, Complex Tissue Regeneration, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, Portugal
- 15:30 514.6 Multiphasic constructs and cell sheet technology in the context of periodontal regeneration
Cedryck Vaquette, Institute of Health and Biomedical Innovation, Queensland University of Technology, Kelvin Grove, Australia

14:00 - 15:30

510b

515 - New Frontiers Symposium Bioinspired adhesive materials

Chairs: Yoshihiro Ito, Nano Medical Engineering Laboratory, RIKEN
Quantitative Biology Cente, Wako, Japan
Haeshin Lee, Department of Chemistry, Korea Advanced Institute of
Science and Technology (KAIST), Daejeon, Korea

- 14:00 515.1 Bio-functionalization of nHA/PLGA hybrid nanofiber scaffolds for bone tissue engineering
Inn-Kyu Kang, School of Applied Chemical Engineering Major in polymer Science and Engineering, Kyungpook National University, Daegu, Korea
- 14:15 515.2 Enhanced burst strength of hydrophobically-modified gelatin-based tissue adhesive for biomedical applications
Tetsushi Taguchi, Biomaterials Unit, National Institute for Materials Science, Tsukuba, Japan
- 14:30 515.3 Artificial biomimetic surfaces for improved epithelial attachment
Mohamed Nur Abdallah, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- 14:45 515.4 Making mucoadhesive nanofibres for vaginal drug delivery applications
Francis A Brako, Biomaterials Processing, University College London, London, United Kingdom
- 15:00 515.5 The researches on cells adhesion on the biocompatible polymer surface with superwettability
Wenlong Song, The State Key Laboratory of Supramolecular Structure and Materials, Changchun, P.R. China
- 15:15 515.6 Tissue development-mimicking extracellular matrices from cultured cells
Guoping Chen, Tissue Regeneration Materials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan

14:00 - 15:45

511e

516 - General Session Biomaterials for cancer therapy

Chairs: Hélder A Santos, Division of Pharmaceutical Chemistry and Technology, University of Helsinki, Helsinki, Finland
Alessandra Girotti, Centro de Investigación Biomédica en Red Bioingeniería, Biomateriales y Nanomedicina, University of Valladolid, Valladolid, Spain

- 14:00 516.1 Collagen matrices with intrafibrillar mineralization increase breast cancer bone metastatic capability
Claudia Fischbach-Teschl, Meinig School of Biomedical Engineering, Cornell University, Ithaca, NY, United States
- 14:15 516.2 Local programming of the lymph node microenvironment to promote efficient T cell immunity in neuroblastoma
Joshua M Gammon, University of Maryland, College Park, College Park, MD, United States
- 14:30 516.3 Synthesis of radioactive gold nanoparticles for brachytherapy treatments using plasma electrochemistry
Mathieu Bouchard, Materials Engineering, Université Laval, Québec, QC, Canada
- 14:45 516.4 Fibronectin modified surfaces for chronic myeloid leukemia cell adhesion to evaluate influence on sensitivity to leukemia therapies
Juliana Valencia Serna, Biomedical Engineering, University of Alberta, Edmonton, AB, Canada
- 15:00 516.5 An advanced bioengineered 3D model mimicking prostate cancer-induced bone metastasis microenvironment
Ali Shokohmand, Faculty of Science and Engineering Faculty, Department of Biomedical Engineering and Medical Physics, Chemistry and Mechanical Engineering, Queensland University of Technology, Brisbane, Australia
- 15:15 516.6 Tuning scaffold pore features to accomplish biomimicry in 3D tumor models
Claudio Ricci, Department of Surgical, Medical, Molecular Pathology and Emergency Medicine, Cisanello Hospital, Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy
- 15:30 516.7 Dual-sensitive hydrogel composite for local release and selective uptake of chemotherapy for the treatment of breast cancer
Yi Zhang, Institute of Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge, MA, United States

14:00 - 16:00

511f

517 - General Session

Biomaterials for cardiovascular applications: vascular repair

Chairs: **Kibret Mequanint**, Chemical Engineering, University of Western Ontario, London, ON, Canada
Martin W King, College of Textiles, North Carolina State University, Raleigh, NC, United States

- 14:00 517.1 Injection of dual-crosslinking hydrogels to limit infarct induced left ventricular remodeling
Jason A. Burdick, Bioengineering, University of Pennsylvania, Philadelphia, PA, United States
- 14:15 517.2 Endoleak and thrombus characterization with dynamic elastography after endoleak embolization following aneurysm endovascular repair
Antony ABG Bertrand-Grenier, Medical Physics, Centre de Recherche du CHUM, Montréal, QC, Canada
- 14:30 517.3 Remodeling and patency of collagen-containing electrospun conduits after initial peritoneal conditioning and aortal grafting
Chris A Bashur, Biomedical Engineering, Florida Institute of Technology, Melbourne, FL, United States
- 14:45 517.4 Silk-extracellular matrix sponges for striated muscle tissue engineering: regeneration after injury and disease
Whitney L Stoppel, Biomedical Engineering, Tufts University, Medford, MA, United States
- 15:00 517.5 Novel quick vascular closure device (QVCD) based on elastic bioresorbable polymer
Carsten A Linti, Biomedical Engineering, Institute of Textile Technology and Process Engineering Denkendorf (ITV), Denkendorf, Germany
- 15:15 517.6 Mending the heart: cardiac remodeling using a combinatorial biomimetic poly(glycerol sebacate)/poly(caprolactone) patch
Jin Gao, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- 15:30 517.7 Magnetic bacterial nanocellulose for neurovascular reconstruction in cerebral aneurysm treatment applications
Sandra L. Arias, Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
- 15:45 517.8 Engineering surfaces of highly aligned ultrafine fibers for enhancing biological functions of the vascular smooth muscle cells (vSMCs)
Yanzhong Zhang, Department of Bioengineering, Donghua University, Shanghai, P.R. China

14:00 - 15:45

515

518 - General Session

Biomaterials in musculoskeletal repair: soft tissues

Chairs: **Showan N Nazhat**, Department of Mining and Materials Engineering, McGill University, Montreal, Canada
Filippo Rossi, Department of Chemistry, Materials and Chemical Engineering "Giulio Natta", Politecnico di Milano, Milan, Italy

- 14:00 518.1 Piezoelectric nanocomposite Poly(vinylidene fluoride-co-trifluoroethylene)/Boron Nitride Nanotubes for tendon repair : Mediating tendon regeneration through activation of piezoresponsive receptors
Marc A Fernandez-Yague, Biomedical Engineering, Centre for Research in Medical Devices (CURAM), Galway, Ireland
- 14:15 518.2 Decellularized muscle matrix implants regenerate muscle in a volumetric muscle loss rat model
Michael J McClure, Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States
- 14:30 518.3 Decellularized skeletal muscle with autologous minced muscle improves regeneration after volumetric muscle loss
Benjamin M Kasukonis, Department of Biomedical Engineering, University of Arkansas, Fayetteville, AR, United States
- 14:45 518.4 Polyetheretherketone as an alternative bearing surface in total knee arthroplasty
Temitope S Adesina, Institute of Orthopaedics and Musculoskeletal Science, University College London, Middlesex, United Kingdom
- 15:00 518.5 Skeletal muscle powered living machines utilizing electrocompact and aligned collagen scaffolds
Victoria A Webster, Case Western Reserve University, Cleveland, OH, United States
- 15:15 518.6 Cartilage molecular engineering using biomimetic aggrecan shows infiltration and distribution of biomimetic aggrecan throughout the cartilage extracellular matrix
Michele S Marcolongo, Materials Science and Engineering, Drexel University, Philadelphia, PA, United States
- 15:30 518.7 Inverse gradient matrix system for osteochondral tissue engineering
Syam Nukavarapu, Orthopedic Surgery and Biomedical Engineering, University of Connecticut Health Center, Farmington, CT, United States

14:00 - 15:30

516a

519 - New Frontiers Symposium Bioceramics inducing osteogenesis, angiogenesis and immunomodulation

Chairs: **Chengtie Wu**, Biomaterials and Tissue Engineering Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, P.R. China
Ahmed Ei-Ghannam, Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte, Charlotte, NC, United States

- 14:00 519.1 P-depleted, Ca-rich β -TCP surfaces after calcination at 500 °C
Marc Bohner, RMS Foundation, Bettlach, Switzerland
- 14:15 519.2 In vivo study of a novel PLGA/TCP/Mg porous scaffold manufactured by 3D printing to enhance angiogenesis and bone regeneration
Yuxiao Lai, Centre for Translational Medicine Research and Development, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
- 14:30 519.3 Using 3D hydroxyapatite-collagen composite scaffolds and spatial-temporal variation to promote vascularized bone tissue regeneration
Rebekah M Rodriguez, Biomedical Engineering, The University of Texas at San Antonio, San Antonio, TX, United States
- 14:45 519.4 Osteoinductive potential of rapidly fabricated acellular injectable dense collagen-Bioglass hybrid scaffolds via gel aspiration-ejection
Showan N Nazhat, Department of Mining and Materials Engineering, McGill University, Montreal, Canada
- 15:00 519.5 Bottom-up synthesis of silica polycaprolactone hybrids for bone regeneration
Tian Sang, Materials Science and Engineering, Imperial College London, London, United Kingdom
- 15:15 519.6 Biomimetically ornamented rapid prototyping fabrication of an apatite-collagen- polycaprolactone composite construct with nano-micro-macro hierarchical structure for large bone defect treatment
Zhiyong Zhang, National Tissue Engineering Center of China, Shanghai 9th People's Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, P.R. China

14:00 - 16:00

516c

520 - General Session Biomaterials for tissue substitutes

Chairs: **Jeremy Gilbert**, Syracuse Biomaterials Institute, Department of Biomedical and Chemical Engineering, Syracuse University, Syracuse, NY, United States
Gervaise Mosser, Laboratoire de Chimie de la Matière Condensée de Paris, Pierre-and-Marie-Curie University (site Jussieu) et l'Ecole Nationale Supérieure de Chimie de Paris, Paris, France

- 14:00 520.1 Magnetic nanocomposites for tissue regeneration therapies
Rebecca Zhiyu Yuan, Mechanical Engineering, University College London, London, United Kingdom
- 14:15 520.2 Development of a hyaluronic acid/plasma-derived fibrin hydrogel for the optimization of dermo-epidermal autologous equivalents
Diego Velasco Bayón, Bioengineering and Aerospace Engineering, Universidad Carlos III de Madrid, Leganés (Madrid), Spain
- 14:30 520.3 Prevascular composite tissue engineered tracheas for airway reconstruction
Daniel S Alt, Case Western Reserve University, Cleveland, OH, United States
- 14:45 520.4 Engineering aligned microribbon-based hydrogels to guide 3D muscle tissue regeneration
Soah Lee, Stanford University, Stanford, CA, United States
- 15:00 520.5 Direct reactive electrospinning of degradable hydrogel nanofibers for tissue engineering
Fei Xu, McMaster University, Hamilton, ON, Canada
- 15:15 520.6 PCL membranes as a tool for a mini-invasive approach to prevent Spina Bifida malformation
Céline Falentin-Daudre, Laboratoire de Biomateriaux pour la Santé-Unité Chimie, Structures et Propriétés de Biomateriaux et d'Agents Thérapeutiques (LBPS/CSPBAT), Université Paris 13, Villetaneuse, France
- 15:30 520.7 Mechanistic analysis of in vivo rapid endothelialization of biofunctionalized small-diameter acellular graft
Atsushi Mahara, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Suita, Japan
- 15:45 520.8 Liquid crystal phases of collagen I for the synthesis of tissues
Gervaise Mosser, Laboratoire de Chimie de la Matière Condensée de Paris, Pierre-and-Marie-Curie University (site Jussieu) et l'Ecole Nationale Supérieure de Chimie de Paris, Paris, France

14:00 - 16:00

517a

521 - New Frontiers Symposium Engineered biomaterials for the management of bleeding and haemorrhage

Sponsored By:



Chairs: Christian Kastrup, Biochemistry & Molecular Biology, University of British Columbia, Vancouver, BC, Canada
Nathan J White, Emergency Medicine, University of Washington, Seattle, WA, United States

- 14:00 521.1 Current challenges and future clinical management of bleeding and coagulopathy after trauma
Barto Nascimento Jr, Department of Surgery, Sunnybrook Health Sciences Centre, Toronto, ON, Canada
- 14:15 521.2 A synthetic heparin antidote with negligible effect on fibrin(ogen), clotting and clot morphology
Manu Thomas Kalathottukaren, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada
- 14:30 521.3 Andexanet alfa for reversal of factor Xa inhibitors induced-anticoagulation in nonclinical and clinical studies
Genmin Lu, Portola Pharmaceuticals, Inc., South San Francisco, CA, United States
- 14:45 521.4 Reversal of parenteral anticoagulants by PEG41-PMAPTAC53: characteristics, efficacy and toxicity studies in rodents
Bartlomiej Kalaska, Department of Pharmacodynamics, Medical University of Bialystok, Bialystok, Poland
- 15:00 521.5 Shape memory devices: a new application as an embolic agent
Yee Shan Wong, Materials Science & Engineering, Nanyang Technological University, Singapore, Singapore
- 15:15 521.6 Multivalent dendritic polyglycerol sulfates as highly anti-inflammatory heparin analogs
Jens Dornedde, Institute of Laboratory Medicine, Charité - Universitätsmedizin Berlin, Berlin, Germany
- 15:30 521.7 Reversible hemostatic properties of sulfobetaine/quaternary ammonium modified hyperbranched polyglycerol
Donald E Brooks, Pathology and Chemistry, University of British Columbia, Vancouver, BC, Canada
- 15:45 521.8 Formation of in situ Hemostatic Sealant Membrane by Mussel-inspired Adhesive Polymers
Haeshin Lee, Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

14:00 - 15:45

518

522 - New Frontiers Symposium Bioelectrical field: from petri dish to tissue regeneration

Chairs: Ze Zhang, Surgery, Laval University, Quebec, QC, Canada
Simon E Moulton, Faculty of Science, Engineering and Technology, Swinburne University of Technology, Melbourne, Australia
Mahmoud Rouabhia, Faculté de médecine dentaire, Université Laval, Quebec, QC, Canada

- 14:00 522.1 Engineering electroactive scaffolds for neural regeneration applications
Christine E Schmidt, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- 14:30 522.2 Effective stimulation of excitable cells using electroactive materials
Simon E Moulton, Faculty of Science, Engineering and Technology, Swinburne University of Technology, Melbourne, Australia
- 14:45 522.3 The active role of electrically stimulated fibroblasts in skin wound healing
Mahmoud Rouabhia, Faculté de médecine dentaire, Université Laval, Quebec, QC, Canada
- 15:00 522.4 Role of electrical therapy in acceleration of cutaneous wound repair
Ardeshir Bayat, Inflammation and Repair, University of Manchester, Manchester, United Kingdom
- 15:15 522.5 Electroconductive nanofiber scaffolds for muscle regenerative engineering
Xiaoyan Tang, The Institute for Regenerative Engineering, The University of Connecticut, Farmington, CT, United States
- 15:30 522.6 Directing cell behavior through conductive CNT hyaluronic acid composite nanofibers
Elisabeth M Steel, Biomedical Engineering, Wayne State University, Detroit, MI, United States

14:00 - 16:00

519

523 - General Session

Surfaces and interfaces: characterization

Chairs: Yuichi Ohya, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan
Roberto Olayo, Física, Universidad Autónoma Metropolitana-Iztapalapa, Mexico, Mexico

- 14:00 523.1 Protein engineering for surface modification using bioorthogonal and combinatorial chemistry
Yoshihiro Ito, Nano Medical Engineering Laboratory, RIKEN Quantitative Biology Center, Wako, Japan
- 14:30 523.2 Label-free 3D analysis of biological tissue with micron spatial and 240k mass resolution using a new SIMS hybrid mass analyser
Alexander Pirkel, Research and Development, ION-TOF Technologies, Muenster, Germany
- 14:45 523.3 The importance of the interface for improving adhesion and stability of substrate/nanocoating systems
Vanessa A Montano-Machado, Dept. Min-Met-Materials Engineering, Université Laval, Quebec, QC, Canada
- 15:00 523.4 An anti-oxidant property of titanium induced by ultraviolet photoactivation
Takeshi Ueno, Tokyo Medical and Dental University, Tokyo, Japan
- 15:15 523.5 A revised correlation between molecular weight between crosslinks and equilibrium degree of swelling of hydrogel networks
Dany J Munoz-Pinto, Engineering Science, Trinity University, San Antonio, TX, United States
- 15:30 523.6 Measurement of acetabular liner roughness with two different cut-off values
Patricia Ortega Cubillos, Mechanical Department, Universidade Federal de Santa Catarina, Florianópolis, Brazil
- 15:45 523.7 Direct measurement of single molecular interaction free energies at solid/liquid interfaces based on non-equilibrium force spectroscopy
Markus Valtiner, Max-Planck-Institut f. Eisenforschung GmbH, Düsseldorf, Germany

14:00 - 15:45

520b

524 - New Frontiers Symposium

Bioinspired materials and devices for regenerative medicine

Sponsored By:



Chairs: Jun Ma, Department of Biomedical Engineering, Huazhong University of Science and Technology, Wuhan, P.R. China
Travis J Klein, Institute of Health and Biomedical Innovation, Queensland University of Technology, Kelvin Grove, Australia

- 14:00 524.1 Hydrogel encapsulated insulin-secreting cells as a treatment for chronic wound healing
Ayesha Aijaz, Biomedical Engineering, Rutgers University, Piscataway, NJ, United States
- 14:15 524.2 Dynamic biodegradation behavior of magnesium-based stent in microfluidic system and in coronary arteries
Ansha Zhao, Biomedical Engineering, Material Science and Engineering, Chengdu, P.R. China
- 14:30 524.3 Photocrosslinkable and elastomeric hydrogels for bone regeneration
Akhilesh K Gaharwar, Department of Biomedical Engineering, Texas A&M University, College Station, TX, United States
- 14:45 524.4 Surface-modified poly(vinyl alcohol) vascular grafts improve endothelialization while maintaining hemocompatibility
Deirdre E J Anderson, Biomedical Engineering, Oregon Health & Science University, Portland, OR, United States
- 15:00 524.5 Nanostructured ECM-like biointerfaces for regenerative medicine applications
Damien Lefèvre, Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Belgium
- 15:15 524.6 In vitro and in vivo evaluation of FGF2 and FGF9 dual-loaded poly(ester amide) fibers for therapeutic angiogenesis
Somiraa S Said, Biomedical Engineering Graduate Program, University of Western Ontario, London, ON, Canada
- 15:30 524.7 Novel biodegradable and porous elastino-mimetic hydrogel of modular properties for soft tissues applications: in vitro and in vivo evaluation
Jerome Sohier, CNRS - IBCP, Lyon, France

N/A

14:00 - 16:00

520c

525 - New Frontiers Symposium

Emerging molecular strategies for the prevention of device infections

Chairs: **Andrew L Hook**, Laboratory of Biophysics and Surface Analysis, University of Nottingham, Nottingham, United Kingdom
Helmut Thissen, Manufacturing Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia

- 14:00 525.1 Have we been neglecting fungi in the rational design of antimicrobial biomaterials?
Bryan R Coad, Future Industries Institute, University of South Australia, Mawson Lakes, Australia
- 14:15 525.2 In vivo prevention of biofilm formation and associated occlusion by biomimetic glycoalkyl polymer in totally implantable venous access devices
Vincent Semetey, Institut de Recherche de Chimie Paris, Chimie ParisTech, Paris, France
- 14:30 525.3 Prebiotic chemistry inspired antimicrobial surfaces
Donna J Menzies, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
- 14:45 525.4 PEG vs POX: a molecular dynamics comparison of anti-fouling effectiveness
Kamron J Ley, School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University, Melbourne, Australia
- 15:00 525.5 Vancomycin-eluting ultra-high molecular weight polyethylene to treat periprosthetic joint infection
Vincentius J Suhardi, Massachusetts Institute of Technology, Boston, MA, United States
- 15:15 525.6 Enzyme immobilization on biomaterial surfaces for prevention of pseudomonas aeruginosa biofilms
Dalal Asker, Materials Science and Engineering, University of Toronto, Toronto, ON, Canada
- 15:30 525.7 Antifouling coatings utilizing highly effective hyaluronic acid-penicillin conjugates
Nisha R Hollingsworth, Biotechnology, Brown University, Providence, RI, United States
- 15:45 525.8 Combinatorial technique to synthesize bioactive crosslinked biodegradable polyesters for biomedical applications
Queeny Dasgupta, Centre for Biosystems Science and Engineering, Indian Institute of Science, Bangalore, India

14:00 - 15:45

524

526 - New Frontiers Symposium

Injectable biomaterials for cell therapy and tissue engineering

Chairs: **Sophie Lerouge**, Mechanical Engineering, École de Technologie Supérieure, Montreal, QC, Canada
Justin J Cooper-White, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, Brisbane, Australia

- 14:00 526.1 EA-valve: development of a tissue-engineered elastin-based heart valve prosthesis
Israel González De Torre, Bioforge, University of Valladolid, Valladolid, Spain
- 14:15 526.2 Photocurable gelatin hydrogels for cell encapsulation
Timothy C Hughes, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton South, Australia
- 14:30 526.3 Chondro-inductive injectable hydrogels for stem cell-based intervertebral disc tissue engineering
Justin J Cooper-White, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, Brisbane, Australia
- 14:45 526.4 In vitro release and cellular bioactivity of a composite adipose-derived hydrogel scaffold
Christopher M Mahoney, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- 15:00 526.5 Controlled release of dexamethasone from in situ forming nanofiber - nanoparticle hybrid hydrogel
Lei Lu, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada
- 15:15 526.6 Biodegradable injectable polymer systems exhibiting temperature-responsive covalent hydrogel formation for medical use
Yuichi Ohya, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan
- 15:30 526.7 Injectable and self-healing dynamic hydrogel as efficient nucleus pulposus replacement for intervertebral disc repair
Mauro Alini, Musculoskeletal Regeneration, AO Research Institute Davos, Davos, Switzerland

16:00 - 16:20

517a

Closing Ceremonies

POSTERS - ROOM 220BCD

LEGEND

Wednesday, May 18 - Poster Session 1A (Odd Numbers)

	Poster Area #
Biomaterials for therapeutic and diagnostic delivery	P1
Specific applications of biomaterials	P1
Biomaterials in cellular engineering	P2
Building blocks	P2
Functional materials	P2
Tissue engineering and regenerative medicine	P3
Biomaterials and host response	P4
Innovation in fabrication	P4
Mechanics and modeling biomaterials science and engineering	P5
Surfaces and interfaces	P5
Clinical performance of biomaterials	P6

Friday, May 20 - Poster Session 2A (Odd Numbers)

	Poster Area #
Biomaterials for therapeutic and diagnostic delivery	P1
Specific applications of biomaterials	P1
Biomaterials in cellular engineering	P2
Building blocks	P2
Functional materials	P2
Tissue engineering and regenerative medicine	P3
Biomaterials and host response	P4
Innovation in fabrication	P4
Surfaces and interfaces	P5
Clinical performance of biomaterials	P6

Thursday, May 19 - Poster Session 1B (Even Numbers)

	Poster Area #
Biomaterials for therapeutic and diagnostic delivery	P1
Specific applications of biomaterials	P1
Biomaterials in cellular engineering	P2
Building blocks	P2
Functional materials	P2
Tissue engineering and regenerative medicine	P3
Biomaterials and host response	P4
Innovation in fabrication	P4
Mechanics and modeling biomaterials science and engineering	P5
Surfaces and interfaces	P5
Clinical performance of biomaterials	P6

Saturday, May 21 - Poster Session 2B (Even Numbers)

	Poster Area #
Biomaterials for therapeutic and diagnostic delivery	P1
Specific applications of biomaterials	P1
Biomaterials in cellular engineering	P2
Building blocks	P2
Functional materials	P2
Tissue engineering and regenerative medicine	P3
Biomaterials and host response	P4
Innovation in fabrication	P4
Mechanics and modeling biomaterials science and engineering	P5
Surfaces and interfaces	P5
Clinical performance of biomaterials	P6

15:00 - 16:30

220bcd (P1)

Poster Session 1A**Biomaterials for therapeutic and diagnostic delivery**

- P.0001 Conducting polymer microspherical cups for organic bioelectronics
Mohammad Reza Abidian, University of Houston, Houston, TX, United States
- P.0003 Combination of poly(ethylene glycol) and hyaluronic acid for insulin delivery
Ryo Adomi, Department of Chemical Science and Engineering, Kobe University, Kobe, Japan
- P.0005 Effective gene delivery by using freeze concentration method
Sana Ahmed, School of Materials Sciences, Japan Advanced Institute of Science and Technology, Ishikawa, Japan
- P.0007 Nano-niosome particles loaded with deferoxamine for management of iron overload complications
Mohsen Akbari, Mechanical Engineering, University of Victoria, Victoria, BC, Canada
- P.0009 Graded ceramic polymer composites for orthodontic applications
Sara Al-Jawoosh, Oral and Dental Science, University of Bristol, Bristol, United Kingdom
- P.0011 Synthesis and characterization of hydrogel microsphere matrices with tunable bioactivity using click chemistry
Daniel L Alge, Department of Biomedical Engineering, Texas A&M University, College Station, TX, United States
- P.0013 Biomolecular hybrid hydrogels to promote dermal progenitor transplantation and skin regeneration
Fraz Anjum, Chemical Engineering, University of Calgary, Calgary, AB, Canada
- P.0015 Plasmid DNA mono-ion complexes with poly(ethylene glycol) for in vivo diffusive gene delivery
Shoichiro Asayama, Department of Applied Chemistry, Tokyo Metropolitan University, Hachioji, Japan
- P.0017 Lipid nanoparticles loaded into biopolymer-based hydrogels; materials for controlled delivery rate
Rachel Auzely-Velty, Cermav-CNRS, University Grenoble Alpes, Grenoble Cedex 9, France
- P.0019 Nanogels for ophthalmic gene therapy
Cheryl P Bachan, School of Biomedical Engineering, McMaster University, Bramalea, ON, Canada
- P.0021 Generation of scaffold-supported microtissues inside cell-instructive hydrogels
Cristina C Barrias, INEB-Instituto de Engenharia Biomédica/i3S-Instituto de Inovação e Investigação em Saúde, Porto, Portugal
- P.0023 Biocellulose scaffold obtained by in situ modifications with water-soluble cellulose derivative
Hernane Silva Barud, Biotecnology, Uniara, Araraquara, Brazil
- P.0025 Hemodynamic targeting stimuli responsive therapeutic delivery to atheroprone vasculature
Timothy C Boire, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States
- P.0027 Effect of addition of Pluronic F68 and Silpuran 2130 A/B to chitosan-xanthan matrices
Renata F Bombaldi De Souza, Department of Engineering of Materials and Bioprocesses, School of Chemical Engineering, University of Campinas (UNICAMP), Campinas, Brazil
- P.0029 Mesoporous silica nanoparticles: particle size control for optimal controlled drug release and unique therapeutic delivery
Meryem Bouchoucha, Chemistry Department, Université Laval, Québec, QC, Canada
- P.0031 Study of insulin-loaded PLLA porous microspheres for pulmonary drug delivery based on compressed CO₂ antisolvent process
Aizheng Chen, Institute of biomaterials and tissue engineering, Huaqiao University, Xiamen, P.R. China
- P.0033 Development and characterization of lecithin-based self-assembly mixed micellar drug delivery systems for curcumin
Ling-Chun Chen, College of Pharmacy, Taipei Medical University, Taipei, Taiwan
- P.0035 Phototriggerable polymersomes for drug delivery applications
Julian P Chesterman, Chemical Engineering, Queen's University, Kingston, ON, Canada
- P.0037 Effects of surface area to volume ratio of PLGA scaffolds with different architecture on scaffold degradation rate and drug release kinetics
Sue Anne Chew, Department of Health and Biomedical Sciences, University of Texas Rio Grande Valley, Brownsville, TX, United States
- P.0039 Intranasal vaccination of mannan-decorated mucoadhesive HPMCP microspheres containing ApxIIA toxin effectively protected *Actinobacillus pleuropneumoniae* infection in mice
Chong-Su Cho, Agricultural Biotechnology, Seoul National University, Seoul, Korea
- P.0041 Anticancer drug delivery using bioreducible chitosan for cancer therapy
Changyong Choi, Polymer Science and Engineering, Suncheon National University, Suncheon, Korea
- P.0043 The design of gadolinium containing peptide amphiphile micelles for molecular MRI
Eun Ji Chung, Institute for Molecular Engineering, University of Chicago, Chicago, United States
- P.0045 Localized siRNA delivery by collagen sponges
Anne-Claude Couffin, Microtechnologies for Biology and Healthcare Division, Commissariat de l'Énergie Atomique et aux Énergies Alternatives, Grenoble, France
- P.0047 Functionalized spider silk spheres stabilize in serum and deliver an active CpG-siRNA immunotherapeutic
Hanna Dams-Kozłowska, Chair of Medical Biotechnology, Poznan University of Medical Sciences, Poznan, Poland
- P.0049 Preparation and characterization of nanoparticles based on poly(ethyleneglycol) methacrylate grafted chitosan for intraocular administration of antibiotics
Jacques Desbrieres, IPREM, Université de Pau et des Pays de l'Adour (UPPA), Pau Cedex 9, France

- P.0051 Alpha-tricalcium phosphate cement: system for controlled release of antibiotic and local anesthetics
Teo A Dick, Department of Materials science and engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil
- P.0053 Instant suture spinning of chitosan and heparin complex for adeno-associated virus delivery
Minjae Do, Chemistry, Korea Advanced Institute of Science & Technology (KAIST), Daejeon, Korea
- P.0055 Synthesis of layered PLGA-PLA microparticles for tunable delayed protein release
Dipankar Dutta, School of Biological and Health Systems Engineering (BME), Arizona State University, Tempe, AZ, United States
- P.0057 PolyLacticAcid for medical applications: Mechanical properties as a function of degradation process
Anas El Maliki, Mechanical Department, École Nationale Supérieure d'Électricité et de Mécanique, Casablanca, Morocco
- P.0059 Disulfiram targeted delivery into breast cancer cells using folate-receptor-targeted PEG-PLGA nanoparticles
Shahab Faghihi, National Institute of Genetic Engineering and Biotechnology, Tehran, QC, Canada
- P.0061 Organogel materials: Preparation and biomedical applications
Sophie Franceschi, Supramolecular chemistry, Université Paul sabatier, Toulouse, France
- P.0063 "Bio-hybrid" therapeutics
Marc A Gauthier, EMT Research Center, Institut National de la Recherche Scientifique (INRS), Varennes, QC, Canada
- P.0065 Multifunctional unimolecular micelles loaded with the anti-cancer drug aminoflavone for triple negative breast cancer Therapy
Shaoqin Gong, University of Wisconsin-Madison, Madison, WI, United States
- P.0067 Multifunctional tailorable composite system as a dual peptide-drug delivery system
Pedro Granja, Instituto Nacional de Engenharia Biomédica / i3S (INEB), Porto, Portugal
- P.0069 PLA/Hydroxyapatite biocomposites for drug delivery systems
David Grossin, Centre de Recherche CIRIMAT, University of Toulouse, Toulouse, France
- P.0071 Endosome-mimicking nanogels for targeted drug delivery
Zhen Gu, Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, North Carolina State University, Raleigh, NC, United States
- P.0073 On-demand release of doxorubicin by biocompatible nanoparticles sensing the matrix metallo-proteinase 2 in 3D tumor spheroids
Daniela Guarnieri, Istituto Italiano di Tecnologia, Napoli, Italy
- P.0075 Triggered release of anticancer drug and theranostics from microspherical vehicles made by coaxial electrospray
Lin Guo, Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- P.0077 Electrical stimulation of cells in living bioelectronic devices
Rachelle T Hassarati, Department of Microsystems Engineering, BrainLinks-BrainTools, Freiburg, Germany
- P.0079 New application for biohydrogels : myoblast cryopreservation for cell therapy
Louis Hatte, Laboratory for Vascular Translational Science (LVTS), Institut National de la Santé et de la Recherche Medicale (INSERM) U1148, Paris, France
- P.0081 Preparation and characterization of polyphosphoester coated nanoparticles having a potential for delivery of hydrophobic drugs to bone
Yuya Hirano, Graduate School of Science and Engineering, Kansai university, Osaka, Japan
- P.0083 Injectable and degradable, hydrophobically modified poly(oligoethylene glycol methacrylate) hydrogels with decoupled physicochemical and biological properties
Todd Hoare, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0085 Immunomodulatory effects of amniotic membrane matrix incorporated into collagen scaffolds
Rebecca A Hortensius, University of Illinois at Urbana-Champaign, Champaign, IL, United States
- P.0087 Polysaccharide-based nanoparticles for potential theranostic applications
Hyeon Jin Jang, Hanyang University, Seoul, Korea
- P.0089 Bioengineered exosomes as delivery vehicles of small interfering RNA for stem cell engineering and in vivo delivery
Yoonhee Jin, Department of Biotechnology, Yonsei University, Seoul, Korea
- P.0091 Development of an arterial flow assay for validation of targeting strategies with microparticles
Maya Juenet, Laboratory for Vascular Translational Science, Institut National de la Santé et de la Recherche Medicale, Paris, France
- P.0093 Mixed micelles based on Hyaluronic acid-Poly(propylene glycol) and Pluronic L61 for targeted Doxorubicin delivery to Multi-drug resistance MCF-7 cells
Heesun Jung, Department of Bioscience and Biotechnology, Konkuk University, Seoul, Korea
- P.0095 Cationic lipopolymer mediated BCR-ABL silencing and implication in chronic myeloid leukemia (CML) therapy
Remant B Kc, Chemical and Material Engineering, University of Alberta, Edmonton, AB, Canada N/A
- P.0097 Thiolated human serum albumin cross-linked dextran as a therapeutic hydrogel material
Roxanne Kieiltyka, Chemistry, Leiden Institute of Chemistry, Leiden, Netherlands
- P.0099 Mesoporous nanocarriers with internal cavity for the delivery of siRNA for bone regeneration
Jungju Kim, Dankook University, Cheonan, Korea
- P.0101 In vitro evaluation of substance-P conjugated nanofibers for potential wound dressing material
Min Sup Kim, Lab of Tissue Engineering, Korea Institute of Radiological and Medical Sciences, Seoul, Korea
- P.0103 Development of self-deployment and drug release polymeric film device
Taro Kondo, Nishizawa/Kaji lab, Bioengineering and Robotics, Tohoku University, Sendai, Japan

- P.0105 Cell delivery system with photodynamic action for tissue engineering
Min-Ah Koo, Department of Medical Engineering, Yonsei University College of Medicine, Seoul, Korea
- P.0107 Fabrication of chitosan based nanoparticles for radiosensitizer siPCGF5 delivery
Eunsun Lee, Division of Radiation Effect, Korea Institute of Radiological & Medical Sciences, Seoul, Korea
- P.0109 Liver-derived decellularized extracellular matrix gels induce complex branching and bile ductule network formation of cholangiocytes in vitro
Phillip L Lewis, Biomedical Engineering, Northwestern University, Chicago, IL, United States
- P.0111 Enhanced vascularization of VEGF synergizing with 2-N,6-O-sulfated chitosan
Changsheng Liu, Engineering Research Center of Biomedical Materials under Ministry of Education, East China University of Science and Technology, Shanghai, P.R. China
- P.0113 Novel strontium ranelate containing biomaterials for the treatment of osteoporotic bone fractures
Janis Locs, Rudolfs Cimdinis Riga Biomaterials Innovations and Development Centre, Riga Technical University, Riga, Latvia
- P.0115 Conducting polymer films with molecular gradients and potential biomedical applications
Sheereen Majid, University of Houston, Houston, TX, United States
- P.0117 Gelatin-based nanocomposite hydrogel as a platform for stem cell tissue engineering
Ryan S Maloney, Bioengineering, University of Kansas, Lawrence, KS, United States
- P.0119 Release of adenosine from chitosan beads
Allen Jed C Mamaril, Department of Biomedical Engineering, University of Memphis, Memphis, TN, United States
- P.0121 Cell membrane capsules as biomimetic drug carriers
Zhengwei Mao, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.0123 Measuring and modeling elution of Cis 2-decenoic acid from phosphatidylcholine coatings
Elysia A Masters, Biomedical Engineering, The University of Memphis, Memphis, TN, United States
- P.0125 Delivery of therapeutic infliximab from nanostructured porous silicon
Steven J P McInnes, Mawson Institute, UniSA, Mawson Lakes, Australia
- P.0127 Changing the treatment paradigm: ex vivo assessment of gemcitabine-eluting degradable polymeric fibres for the treatment of pancreatic cancer
Simon E Moulton, Faculty of Science, Engineering and Technology, Swinburne University of Technology, Melbourne, Australia
- P.0129 Temperature-induced assembly and direct drug loading of covalently cross-linked, amphoteric, smart poly(N-isopropylacrylamide) nanogels based on oligomeric precursors
Eva Mueller, Chemical Engineering, McMaster University, Oakville, ON, Canada
- P.0131 Silica-containing redox nanoparticles improve therapeutic efficacy for peritoneal dialysis
Yukio Nagasaki, Materials Science and Medical Sciences, University of Tsukuba, Tsukuba, Japan
- P.0133 Algicidal Effect of Chitosan according to Various Molecular-Weight against Green-Tide
Jae-Woon Nah, Polymer Science and Engineering, Suncheon National University, Jeonnam, Korea
- P.0135 Effect of poly-L-co-D,L-lactide scaffolds combined with simvastatin and mesenchymal cells on calvarial bone defects and ectopic subcutaneous bone formation
Newton Maciel Oliveira, Morphology and Pathology, Faculty of Medical Sciences and Health, Pontifical Catholic University of São Paulo, Sorocaba, Brazil
- P.0137 Engineering an injectable nanocomposite hydrogel to deliver angiogenic growth factors
Settimio Pacelli, Chemical and Petroleum Engineering, The University of Kansas, Lawrence, KS, United States
- P.0139 Inhalable stimuli-sensitive drug delivery system for controlled drug delivery to lungs
Elżbieta Pamuła, Department of Biomaterials, AGH University of Science and Technology, Kraków, Poland
- P.0141 Effects of dextran sulfate and gelation conditions on simvastatin encapsulation in chitosan-coated alginate microspheres
Ava Parsian, Department of Mechanical Engineering, University of Ottawa, Ottawa, ON, Canada
- P.0143 17beta-estradiol loaded poly(lactic-co-glycolic acid) nanoparticles for cognitive therapy
Alesia V Prakapenka, Arizona State University, Tempe, AZ, United States
- P.0145 Effect of estradiol conjugated chitosan phosphorylcholine polymer prodrug on the cardiovascular system
Baowen Qi, Faculty of Pharmacy, University of Montreal, Montreal, QC, Canada
- P.0147 Controlled release of proteins from polymeric microparticles based on electrostatic interactions
Vida Rahmani, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0149 Site specific delivery of cisplatin for improved cancer treatment
Philip J T Reardon, Division of Biomaterials and Tissue Engineering, University College London, Eastman Dental Institute, London, United Kingdom
- P.0151 Synthesis and properties of charge-shifting polycations: poly[3-aminopropyl methacrylamide-co-N,N-dimethylaminoethyl acrylate]
Samantha Ros, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada
- P.0153 Combinatorial photoclickable peptide microarrays for high throughput screening of 3-D cellular microenvironments
Sadhana Sharma, Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO, United States
- P.0155 Controlled mineralization by bionanomaterials
Amir Sheikhi, Chemistry, McGill University, Montreal, QC, Canada

- P.0157 Odontogenic differentiation of Stem Cell from Apical Papilla (SCAP) using a dual bioactive molecule releasing core-shell nanopolymeric system
Suja Shrestha, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada
- P.0159 Methods of BioLithoMorphie® for mimicking 3D cellular environments
Sukhdeep Singh, Nanobiosystem Technology, Ilmenau University of Technology, Ilmenau, Germany
- P.0161 A biomaterials approach to interface cryptic laminin information with epithelial tissue as a strategy to counteract TGFbeta1-induced fibrosis
Jean-Philippe St-Pierre, Departments of Materials and Bioengineering, Imperial College London, London, United Kingdom
- P.0163 Self-assembled mixed micelle as carriers for efficient delivery of hydrophobic chemotherapeutic agent
Chia Yu Su, Pharmaceutical, Taipei Medical University, Taipei, Taiwan
- P.0165 Sustained release of MCP-1 from an electrospun scaffold by incorporation of mesoporous silica nanoparticles
Shraddha Thakkar, Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands
- P.0167 Covalently cross-linked PEG and alginate hydrogels for the triggered sustained delivery of protein therapeutics
D'arcy Turner, Chemical Engineering, Queen's University, Kingston, ON, Canada
- P.0169 Encapsulation of a hydrophobic drug in polyphosphate-based nanocarriers
Stéphanie Vanslambrouck, Laboratoire d'ingénierie de Surface, Centre de Recherche sur les Matériaux Avancés, Université Laval, Québec, QC, Canada
- P.0171 Anti-trombogenic property of sulfated chitosan films
Rodrigo Vieira, Chemical Engineering, Universidade Federal Do Ceara, Fortaleza, Brazil
- P.0173 Mesoporous glasses doped with therapeutic ions as smart platform for future, highly targeted therapies in tissue regeneration
Chiara Vitale-Brovarone, Applied Science and Technology Department, Politecnico di Torino, Torino, Italy
- P.0175 Inflammation-mediated drug release using a gas-generating system for treating osteomyelitis
Wei-Lin Wan, Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan
- P.0177 Detergent decellularization methods affect the surface molecular functionality of biologic scaffolds
Lisa White, School of Pharmacy, University of Nottingham, Nottingham, United Kingdom
- P.0179 Colloidal extracellular matrix gels for filling and remodeling osseous defects
Jon W Whitlow Jr, Bioengineering Department, University of Kansas, Lawrence, KS, United States
- P.0181 Angiopoietin-1-derived peptide promotes keratinocyte survival and diabetic wound healing
Yun Xiao, University of Toronto, Toronto, ON, Canada
- P.0183 Fabrication of smart biointerfaces in nanochannels with a thiolated temperature-responsive polymer
Yan Xu, Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Osaka, Japan
- P.0185 Shear-thinning hyaluronic acid hydrogels for insulin delivery
Kun Xue, Biology, Massachusetts Institute of Technology (MIT), Cambridge, MA, United States
- P.0187 Modulation of keratin in adhesion, proliferation, adipogenic and osteogenic differentiation of porcine adipose-derived stem cells
Jiashing Yu, Chemical Engineering, National Taiwan University, Taipei, Taiwan
- P.0189 Injectable thermogels and their biomedical applications
Lin Yu, State Key Laboratory of Molecular Engineering of Polymers & Department of Macromolecular Science, Fudan University, Shanghai, P.R. China
- P.0191 The regulation of endothelial nitric oxide synthase by extracellular matrix in human late outgrowth endothelial progenitor cells
Yifan Yuan, Cellular and Molecular Medicine, Ottawa Hospital Research Institute/University of Ottawa, Ottawa, ON, Canada
- P.0193 Synthesis and characterization of biodegradable polyurethanes for controlled drug release
Rong Zhang, Materials Science and Engineering, Changzhou University, Changzhou, P.R. China
- P.0195 Fabrication and characterization of artificial heart valves composed of poly(ethylene glycol) and natural protein fibers
Xing Zhang, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China

15:00 - 16:30

220bcd (P1)

Poster Session 1A**Specific applications of biomaterials**

- P.0197 The effects of mechanical and chemical scaffold surface cues on retinal pigment epithelial cells
Ayesha Aijaz, Biomedical Engineering, Rutgers University, Piscataway, NJ, United States
- P.0199 Xenografting of isolated human follicles in fibrin scaffold associated to hyaluronan: preliminary results
Christiani Andrade Amorim, Gynecology, Université Catholique de Louvain, Brussels, Belgium
- P.0201 The dorsal skin fold chamber as new model of delayed wound healing to monitor the impact of pro-angiogenic starPEG-heparin hydrogels on angiogenesis and wound healing outcome during skin regeneration
Christian Beescho, Plastic Surgery, University Hospital Leipzig, Leipzig, Germany
- P.0203 Tubulogenesis of iPSC endothelial cells stabilized by human mesenchymal stem cells in fibrin gels
Gisele A Calderon, BioEngineering, Rice University, Houston, TX, United States
- P.0205 Preparation of injectable poly methacrylic acid hydrogels and study of their vascular regenerative effect in vivo
Virginie FM Coindre, Biomedical Engineering, Institute of Biomaterials & Biomedical Engineering, Toronto, ON, Canada
- P.0207 Use of transwell cell culture and 3D-printing technology to develop an in vitro oviduct model to study bovine fertilization
Pedro F Costa, Utrecht Biofabrication Facility & Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.0209 Development of biomimetic materials for sutureless ocular surface repair
Lauren A Costella, Biomedical Technologies Group, Luna Innovations, Charlottesville, VA, United States
- P.0211 Synthesis and characterization of biodegradable fibrin based biomaterial for wound repair
Marie Deneufchâtel, Health Sciences, University of Cergy Pontoise, Cergy Pontoise Cedex, France
- P.0213 Effects of modified PEG scaffold-immobilized vascular endothelial growth factor C and chondromodulin-1 on endothelial cells
Daniel Foyt, Hofstra School of Engineering, Hofstra University, Hempstead, NY, United States
- P.0215 Multifactorial approaches for cell phenotype maintenance and function
Diana Gaspar, National University of Ireland Galway, Galway, Ireland
- P.0217 In vitro and in vivo assessment of magnetically actuated biomaterials for tendon regeneration
Manuela E Gomes, 3B's Research Group / University of Minho, Guimaraes, Portugal
- P.0219 Microporous polymer scaffolds that control innate immunity for enhanced islet transplant
Michael Gower, Chemical Engineering, University of South Carolina, Columbia, SC, United States
- P.0221 Preservation of native extracellular matrix structure correlates with onset temperature in eight commercial collagen wound dressings
Abram Daved Janis, Hollister Incorporated, Libertyville, IL, United States
- P.0223 Silver decorated bacterial cellulose: a tunable antibacterial material
Solmaz Karamdoust, Chemical and Biomedical Engineering, University of Western Ontario, London, ON, Canada
- P.0225 Ocular application of a polyisobutylene-based polymer as a glaucoma drainage device
Yasushi P Kato, Research & Development, InnFocus Inc., Miami, FL, United States
- P.0227 The impact of hyaluronic acid coating on the surface properties of model contact lenses
Myrto Korogiannaki, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0229 Fabrication of an injectable hydrogel made of modified CMC and pullulan for preventing postoperative tissue adhesion
Oh Hyeong Kwon, Kumoh National Institute of Technology, Gumi, Korea
- P.0231 Fabrication and characterization of hydrocolloid dressing with silk fibroin nanoparticle for wound healing
Ok Joo Lee, Nano Bio Regenerative Medical Institute, Hallym University, Chuncheon, Korea
- P.0233 Development of a novel wound management dressing based on the combination of collagen and honey
Annalisa Neri, Materials, Imperial College of London, London, United Kingdom
- P.0235 Neo-angiogenesis of hMSCs Transfected with both Peptide and Genes loaded/coated PLGA Nanoparticles
Ji Sun Park, CHA University, Seongnam-si, Korea
- P.0237 Crosslinked biopolymer blend based tubular construct for vascular conduit application
Harpreet S Pawar, School of Medical Science & Technology, Indian Institute of Technology, Kharagpur, India
- P.0239 In vitro evaluation of bacteria growth inhibition by E. coli, S. aureus, E. faecalis
Klaudia A Pluta, Cracow University of Technology, Cracow, Poland
- P.0241 Tendon tissue differentiation with use of fibrous scaffolds and peptide insulin for rotator cuff applications
Daisy M Ramos, Materials Science and Engineering, University of Connecticut, Farmington, CT, United States
- P.0243 Biomedical potential of fucoidan, a seaweed sulfated polysaccharide: from an anticancer agent to a building block of cell encapsulating systems for regenerative therapies
Rui Reis, University of Minho - 3B's research Group, University of Minho, Guimarães, Portugal
- P.0245 Engineering a functional ovary with 3D biomaterial printing
Alexandra L Rutz, Northwestern University, Chicago, IL, United States

15:00 - 16:30

220bcd (P2)

Poster Session 1A**Biomaterials in cellular engineering**

- P.0247 Decellularized placenta tissue as basis for a dual-level prevascularization study
Karl H Schneider, Biomaterials, Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Vienna, Austria
- P.0249 Antibacterial activity of silver nanoparticles-doped hydroxyapatite against *Staphylococcus aureus*
Agnieszka L Sobczak-Kupiec, Institute of Inorganic Chemistry and Technology, Cracow University of Technology, Cracow, Poland
- P.0251 A Biomaterial-based Microparticle Vaccine Reverses Type 1 Diabetes in NOD Mice
Joshua M Stewart, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- P.0253 Physicochemical characteristics of chitosan/Beetosan hydrogels modified with Aloe vera
Bożena Tylińczak, Department of Chemistry and Technology of Polymers, Cracow University of Technology, Cracow, Poland
- P.0255 Synthesis and characterization of non-absorbable surgical sutures obtained from polyurethanes synthesized from polyols derived from castor oil, isophorone diisocyanate and poly(μ -caprolactone): physico-mechanical properties, degradability and in vitro cytotoxicity
Yomaira Y Uscategui, Doctorado en Biociencias, Universidad de La Sabana, Chia, Colombia
- P.0257 Poly(lactic-co-glycolic acid)/gelatin electrospun scaffolds seeded with human mesenchymal stem cells for skin tissue engineering
Nadia A Vázquez, School of Medicine, National Autonomous University of Mexico, Distrito Federal, Mexico
- P.0259 Development and evaluation of self-assembled biomaterials to maximise the function of conformal encapsulation of pancreatic islets in type 1 diabetes
Diana Velluto, Diabetes Research Institute, Miller School of Medicine University of Miami, Miami, FL, United States
- P.0261 Effects of the incorporation of epsilon-aminocaproic acid/chitosan particles to fibrin on cementoblast differentiation and cementum regeneration
Kyung Mi Woo, Department of Pharmacology & Dental Therapeutics, School of Dentistry, Seoul National University, Seoul, Korea
- P.0263 Microwave induced tailoring of Chitosan polysaccharide with vinyl monomer for sustained drug release
Tulika Malviya, Department of Chemistry, University of Allahabad, Allahabad, India
- P.0301 Is Mesenchymal stem cell helpful in early Osteoarthritis Knee?
Aditya Aggarwal, Orthopedics, Post Graduate Institute of Medical Education & Research Chandigarh 160012 India, Chandigarh, India
- P.0303 Chondrogenic differentiation of human induced pluripotent stem cells in a photoclickable biomimetic PEG hydrogel
Elizabeth A Aisenbrey, Chemical and Biological Engineering, University of Colorado, Boulder, CO, United States
- P.0305 Intrinsically degradable protein patterns for temporal stem cell engineering
Bethany M Almeida, Biomedical Engineering, Brown University, Providence, RI, United States
- P.0307 Aligned melt spun PCL fibers orientate smooth muscle cells and the preservation of the contractile phenotype
Ramya Bhuthalingam, School of Materials Science & Engineering, Nanyang Technological University, Singapore, Singapore
- P.0309 A Biodegradable Knitted Cardiac Patch For Myocardium Regeneration Using Cardiosphere-derived Cells (CDCs)
Jiyang Chen, College of Textile, North Carolina State University, Cary, NC, United States
- P.0311 Role of hierarchical topography of titanium surface on mesenchymal stem cells adhesion and differentiation behaviours in vitro
Peng Chen, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- P.0313 Hydrogels grafted with different sequence of oligo-peptide for xeno-free culture of human pluripotent stem cells
Yen Ming Chen, Department of Chemical and Materials Engineering, National Central University, Taoyuan, Taiwan
- P.0315 Polymer micropatterning induces spatially organised fibronectin nanonetworks for efficient integrin/growth factor interaction
The Annie Cheng, Biomedical Engineering, University of Glasgow, Glasgow, United Kingdom
- P.0317 Cytokines inflammatory genes profile in experimental frozen-thawed ovarian grafts treated with scaffold-base delivery of adipose tissue-derived stem cells
Luciana Lamarão Damous, Obstetrics and Gynecology, Faculdade de Medicina da Universidade de São Paulo, Sao Paulo, Brazil
- P.0319 A thermoresponsive injectable delivery system for therapeutic cells to the retina
Megan J Dodd, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0321 Dynamically stiffening matrices mimic fibrosis and drive cardiac phenotypes in vitro
Adam J Engler, Bioengineering, University of California San Diego, La Jolla, CA, United States
- P.0323 Modulation of self-assembling peptide hydrogel properties for evaluation of in vitro fibroblast migration
Christopher Eom, Columbia University, New York, NY, United States

- P.0325 Effect of polystyrene and fluoropolymer-based culture vessels on monocyte-based immunotherapy products
Natalie Fekete, Chemical Engineering, McGill University, Montreal, QC, Canada
- P.0327 Micropit surfaces designed for accelerating osteogenic differentiation of stem cells
Katsuko S Furukawa, Department of Bioengineering, Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan
- P.0329 Bone surface microenvironment Mimicked PLA scaffolds for osteogenic stem cell differentiation
Bora Garipcan, Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey
- P.0331 Design of biopolymer-based 3D scaffolds for cardiac mesenchymal stem cell therapy
Sophie Girod Fullana, Centre de Recherche CIRIMAT, Université Paul Sabatier, Toulouse, France
- P.0333 Pericyte-based collagen scaffold for vascular tissue engineering
Beyza Gokcinar Yagci, Department of Stem Cell Sciences, Institute of Health Sciences, Ankara, Turkey
- P.0335 Effect of Micro-Fiber Modulus on Mesenchymal Stem Cell Morphology and Function in Model Micro-Fiber/Hydrogel Composites
Aaron S Goldstein, Chemical Engineering, Virginia Tech, Blacksburg, VA, United States
- P.0337 Adhesion and proliferation of mesenchymal stem cells from bone marrow in poly (L-lactic acid) (PLA) fibres scaffolds
Marco V Granados Sr, Tissue Bioengineering Laboratory, Universidad Nacional Autónoma de México, México, Mexico
- P.0339 A prosurvival and proangiogenic stem cell delivery system to promote ischemic limb regeneration
Jianjun Guan, Materials Science and Engineering, The Ohio State University, Columbus, OH, United States
- P.0341 Heparin conjugated electrospun fibrous composites as ECM analogues
Vincenzo Guarino, Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples, Italy
- P.0343 Engineering temporal transitions in matrix environment to regulate hematopoietic stem cell activity
Brendan Harley, Chemical and Biomolecular Engineering, U Illinois Urbana Champaign, Urbana, IL, United States
- P.0345 Influence of silicone implant surface topography on early stage human dermal fibroblast behavior
Mathilde Hindié, ERRMECe laboratory, Cergy-Pontoise University, Cergy-Pontoise, France
- P.0347 Mechanical and biological properties of alginate-coated beta-tricalcium phosphate-fiber scaffold
Keiko Izawa, Department of Materials and Life Sciences, Sophia university, Tokyo, Japan
- P.0349 Silk protein as a cell additive
You-Young Jo, Sericultural & Apicultural Materials Division, National Academy of Agricultural Science, Wanju-gun, Korea
- P.0351 Feeder-free culture of mouse embryonic stem cells using ozone/UV surface-modified substrates
Kohei Kasai, Graduate School of Science and Technology, Keio University, Tokyo, Japan
- P.0353 Isolation and culture of human adipose derived stem cells on collagen scaffolds: potential application for tissue engineering in bahrain
Michael B Keogh, School of Medicine, Royal College of Surgeons in Ireland, Manama, Bahrain
- P.0355 Traction force microscopy of mesenchymal stem cells in mode of frustrated differentiation
Satoru Kidoaki, Laboratory of Biomedical and Biophysical Chemistry, Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan
- P.0357 Cell toxicity of Cocoon Extracts for Biomedical Resources
Haeyong Kweon, Sericultural and Apicultural Materials Division, National Academy of Agricultural Science, Wanju-gun, Korea
- P.0359 Tissue formation in PCL scaffolds embedding collagen gel undergoing short periods of mechanical compression
Damien Lacroix, University of Sheffield, Sheffield, United Kingdom
- P.0361 Desulfated heparin cell coating promotes mesenchymal stem cells aggregate chondrogenic differentiation
Jennifer Lei, Bioengineering/Mechanical Engineering, Georgia Institute of Technology, Atlanta, United States
- P.0363 Human adipose-derived stem cell isolation from fat tissues by membrane filtration method via nylon net filters having different pore sizes
Hong-Ren Lin, Chemical Engineering and Material Sciences Department, National Center University, Taoyuan, Taiwan
- P.0365 Bioprinting 3D cell-laden hydrogel microarray for screening human periodontal ligament stem cells response to extracellular matrix
Yufei Ma, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, P.R. China
- P.0367 Micropatterned biomaterials facilitate osteopromotion in vitro
Chelsea M Magin, Research & Development, Sharklet Technologies, Inc, Aurora, CO, United States
- P.0369 Ozone/UV surface modification of cell culture substrate and effect of that on adhesion and growth of mouse iPS cells
Shogo Miyata, Department of Mechanical Engineering, Faculty of Science and Technology, Keio University, Yokohama, Japan
- P.0371 Micro-topographical Surface Features interfere with Osteoblast Cell Signaling
Caroline Moerke, Department of Cell Biology, University Medical Center Rostock, Rostock, Germany
- P.0373 Development of channelled hydrogel structures to engineer complex tissues
Sam R Moxon, Pharmacy, University of Huddersfield, Huddersfield, United Kingdom
- P.0375 3D porous polymer scaffolds for neural induction of iPS cells
Ashley R Murphy, Materials Science and Engineering, Monash University, Melbourne, Australia
- P.0377 In vitro and In vivo evaluation of a hybrid matrix system for bone regeneration through endochondral ossification
Syam Nukavarapu, Orthopedic Surgery and Biomedical Engineering, University of Connecticut Health Center, Farmington, CT, United States

- P.0379 Impact of bioactive surfaces on stem cells differentiation into osteoblasts lineage
Laurence Padiolleau, Department of Mining, Metallurgical and Materials Engineering, Laval University, Québec, QC, Canada
- P.0381 Enzymatic control of chitosan gelation for cell delivery vehicle
Nivaldo A Parizotto, Biotechnology Post Graduation Program, University of Araraquara (UNIARA), São Carlos, Brazil
- P.0383 Preparation and characterization of non-osteogenic compact bone scaffold for tendon tissue engineering
Quan Qing, Institute of Stem Cell and Tissue Engineering, Regenerative Medicine Research Center, West China Hospital, Sichuan University, Chengdu, P.R. China
- P.0385 Porous polymer scaffolds for 3D culture and maintenance of pluripotent stem cells
Jessie L Ratcliffe, Materials Science & Engineering, Monash University, Notting Hill, Australia
- P.0387 Interplay of surface hydrophobicity and ligand nanoassembly in stem cell mechanosensitivity
Tojo Razafiarison, Department of Health Science and Technology, Uniklinik Balgrist, Institute for Biomechanics, Zürich, Switzerland
- P.0389 Biocompatibility and mineralization of osteoblastic cells in contact with niobium
João M A Rollo, Materials Engineering Department, Escola de Engenharia de São Carlos, Universidade de São Paulo, Processo FAPESP, São Carlos, Brazil
- P.0391 Functional and structural insights into TIMP-3- glycosaminoglycan interactions - implications for the design of functional biomaterials improving chronic wound treatment
Sandra Rother, Technische Universität Dresden, Dresden, Germany
- P.0393 Integrated multimodal analysis platform for stem cell chondrogenic differentiation.
Colin A Scotthford, Faculty of Engineering, University of Nottingham, Nottingham, United Kingdom
- P.0395 Tendon cells cultured on electrochemically coated hydroxyapatite and silicate-substituted hydroxyapatite substrates
Anand Shah, Centre for Biomedical Engineering, Institute of Orthopaedics and Musculo-Skeletal Science, University College London, London, United Kingdom
- P.0397 Cellular engineering via three-dimensional matrices
Paresch C Shrimali, Biosciences and Bioengineering, Indian Institute of Technology, Bombay, Mumbai, India
- P.0399 Modified diels alder click crosslinked hydrogels for 3d cell culture
Laura J Smith, Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- P.0401 Di-functionalized hyaluronic acid with reactive thiol and azide groups for the neural differentiation of mouse embryonic stem cells
Laura Smith Callahan, Neurosurgery and Center for Stem Cells and Regenerative Medicine, University of Texas Health Science Center, Houston, TX, United States
- P.0403 Evaluation of a mussel-derived polymer as a natural bioactive coating for titanium.
Alexander Steeves, Department of Mechanical Engineering, University of Ottawa, Ottawa, ON, Canada
- P.0405 Selective elimination, clump production and patterning of hiPSCs by light on PAG-polymer-functionalized substrates
Kimio Sumaru, Biotechnology Research Institute for Drug Discovery, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
- P.0407 Growth of mouse iPSC cells on silk fibroin substrate
Yasushi Tamada, Faculty of Textile Science and Technology, Shinshu University, Ueda, Japan
- P.0409 A novel hyaluronate microscaffold for treating post-traumatic osteoarthritis
Liping Tang, University of Texas at Arlington, Arlington, TX, United States
- P.0411 Glycosaminoglycan-based hydrogels with tunable sulfation and degradation for anti-inflammatory small molecule delivery
Liane E Tellier, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- P.0413 Hyaluronan-based cryogels are effective scaffolds for human dermal fibroblasts supporting long term growth and matrix deposition in vitro
Stephan Thönes, Klinik und Poliklinik für Dermatologie, Venerologie und Allergologie, Universität Leipzig, Leipzig, Germany
- P.0415 Titanium surface biofunctionalization using dmp1 peptide sequence: from chemical attachment to osteogenic differentiation study
Luciana Daniele Trino, Post Graduation in Materials Science, State University of São Paulo, Chicago, IL, United States
- P.0417 Manipulation of magnetic nanorods to study the effect of a single nanoparticle in an isolated cell
Loreto M Valenzuela Roediger, Chemical and Bioprocessing Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile
- P.0419 Sulfated hyaluronan affects fibronectin matrix assembly by human bone marrow stromal cells
Sarah Vogel, Institute of Physiological Chemistry, TU Dresden, Dresden, Germany
- P.0421 Click-chemistry based biodegradable polymer membrane for tendon tissue engineering
Chong Wang, Orthopaedics and Traumatology, The University of Hong Kong, Hong Kong, Hong Kong
- P.0423 The essential role of matrix selection on the osteoblastic and chondrocytic differentiation of mesenchymal stem cell
Fang Wu, Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- P.0425 Controlling the biochemical environment of extracellular matrix mimics over time to study and influence cell-matrix interactions for applications in regenerative medicine
Ryan G Wylie, Chemistry and Chemical Biology, McMaster University, Hamilton, QC, Canada
- P.0427 Lysosomal reacidification via degradation of PLGA nanoparticles in a lipotoxic cardiomyopathy model
Frederick M Zasadny, University of Iowa, Iowa City, IA, United States

15:00 - 16:30

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Poster Session 1A**Building blocks**

- P.0429 A Fourier transform infrared spectroscopic study of tantalum-containing silicate bio-glasses
Adel MF Alhalawani, Ryerson University, Toronto, ON, Canada
- P.0431 High Value Biomaterials from Dairy Milk Proteins
Azam Ali, Department of Applied Sciences, University of Otago, Dunedin, New Zealand
- P.0433 Developing self-assembling elastin-like polypeptide nanoparticles using medium-length sequences: ramifications of chain length and guest amino acid hydrophobicity on assembly and disassembly conditions
Markian S Bahniuk, Biomedical Engineering, University of Alberta, Edmonton, AB, Canada
- P.0435 Effect of the incorporation of cobalt on the in vitro apatite formation of sol-gel bioactive glasses
Julian Bejarano Narvaez, Departamento de Farmacología y Toxicología, Universidad de Chile, Santiago, Chile
- P.0437 Improved serum stability of collagen binding peptides through structural modifications
Lucas L Bennink, Bioengineering, University of Utah, Salt Lake City, UT, United States
- P.0439 Biodegradable bone substitute based on keratin biopolymer
George J Dias, Anatomy, School of Medical Sciences, University of Otago, Dunedin, New Zealand
- P.0441 Exploiting interactions between bisphosphonate and bioactive glass as a strategy to develop novel hybrid materials for bone regeneration
Mani Diba, Biomaterials, Radboud University Medical Center, Nijmegen, Netherlands
- P.0443 Elastin-like scaffolds for multiple-layered cell cultures
Constancio Gonzalez Obeso, Fisica de la Materia Condensada, University of Valladolid, Valladolid, Spain
- P.0445 Non-chemical approaches to supra-bio-molecular assembly
Andrea A Greschner, Énergie, Matériaux, et Télécommunications, Institut National de la Recherche Scientifique, Montreal, QC, Canada
- P.0447 Catechin-albumin conjugates: potentials as an antioxidant-functionalized drug carrier
Izumi Haraguchi, Graduate School of Engineering, Kobe University, Kobe, Japan
- P.0449 Immobilization of functional peptides to crystalline regions of silk fibroin-based biomaterials
Tomoko Hashimoto, Nara Women's University, Nara, Japan
- P.0451 The influence of increasing Sr²⁺-content on the structure of borate-based glasses.
Yiming Li, Mechanical and Industrial Engineering, Ryerson University, Toronto, ON, Canada
- P.0453 Functional supermolecular composites of silk fibroin/poly(3,4-ethylenedioxythiophene) and its applications: a multifunctional drug-embedded live-cell sensors
Ta-Chung Liu, Material Science and Engineering, National Chiao-Tung University, Hsinchu, Taiwan
- P.0455 Characterisation of the dissolution of phosphate-based glasses via vapour sorption
Shiva Naseri, Materials and Mining Engineering, McGill University, Montreal, QC, Canada
- P.0457 Structural analysis of fluor containing bioactive glass nanoparticles synthesized by sol-gel route assisted by ultrasound energy
Marivalda M Pereira, Departamento de Engenharia Metalúrgica e de Materiais, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
- P.0459 Novel polyethylene glycol hydrogels incorporating RADA16 peptides as in vitro tissue mimetics
Susanna Piluso, Department of Materials Engineering (MTM), Materials for Living Systems, KU Leuven, Leuven, Belgium
- P.0461 Self-assembled peptide-polymer hydrogels as a 3D nanofiber substrate for biomimetic hydroxyapatite mineralization
Elham Radvar, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- P.0463 Characterization of titanium-containing bioactive glasses for coating metallic implants
Omar A Rodriguez, Mechanical and Industrial Engineering, Ryerson University, Toronto, ON, Canada
- P.0465 On the synthesis of metal organic frameworks (MOF) based on tetrapyrrolylporphine and their characterization
Mei-Jywan Syu, Chemical Engineering, National Cheng Kung University, Tainan, Taiwan
- P.0467 Synthesis of well-defined poly(2-oxazoline) derivatives for biomedical applications
Pei Tang, School of Engineering and Materials Science, Queen Mary, University of London, London, United Kingdom
- P.0469 Optimizing structural and mechanical properties of recombinant spider wrapping silk fibres
Nathan Weatherbee-Martin, Biochemistry and Molecular Biology, Dalhousie University, Halifax, NS, Canada
- P.0471 Co-delivery of ETS1 siRNA and doxorubicin using supramolecular nanoparticles to overcome adriamycin resistance via downregulation of MDR1 transcription
Min Wu, The Department of Chemistry, Institute of Chemical Biology and Pharmaceutical Chemistry, Zhejiang University, Hangzhou, P.R. China
- P.0473 Preparation and characterization of two high water absorption regenerated cellulose films
Xiaopeng Xiong, Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen, P.R. China
- P.0475 Fabrication of patterned co-culture composed of adherent cells and immobilized nonadherent cells on the albumin-based substrate
Hironori Yamazoe, National Institute of Advanced Industrial Science and Technology (AIST), Osaka, Japan

- P.0477 The development of supramolecular antimicrobial bioactive materials
Sabrina Zaccaria, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands
- P.0479 Two-component supramolecular hydrogels based on a cholic acid dimer and carboxylic acids
Meng Zhang, Chemistry, University of Montreal, Montreal, QC, Canada
- P.0481 Fabrication of high performance ultrafine fibers of silk fibroin for tissue scaffolding
Yanzhong Zhang, Department of Bioengineering, Donghua University, Shanghai, P.R. China

- P.0499 Bacteriostatic plasma polymers that release nitric oxide
Thomas D Michl, University of South Australia, Mawson Lakes, Australia
- P.0501 A novel dental implant material Ti-5Cu with antibacterial and antibiofilm properties
Ling Ren, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China
- P.0503 Thiolated-2-methacryloyloxyethyl phosphorylcholine protected silver nanoparticles as novel photo-induced cell-killing agents
Arune Sangsuwan, Graduate School of Science and Engineering, Kansai University, Osaka, Japan
- P.0505 Novel expression of plectasin in *Bacillus subtilis* by a maltose inducible vector
Anshan Shan, Northeast Agricultural University, Institute of Animal Nutrition, Harbin, P.R. China
- P.0507 Corrosion property of vitamin D loaded nanotubes for bio-implants application in an in vitro environment
Tolou TS Shokuhfar, Bioengineering, University of Illinois at Chicago, Chicago, IL, United States
- P.0509 Photo-induced thermal-responsive nanogels for controlled drug release
Wei-Bor Tsai, Chemical Engineering, National Taiwan University, Taipei, Taiwan
- P.0511 Stimulus amplifying biohybrid materials for highly sensitive drug and toxin detection
Hanna J Wagner, Faculty of Biology / BIOS, University of Freiburg, Freiburg, Germany
- P.0513 Temperature and pH sensitive polyampholytes used as protein aggregation inhibitors
Jing Zhao, Department of Chemistry & Chemical Biology, McMaster University, Hamilton, ON, Canada

15:00 - 16:30

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Poster Session 1A

Functional materials

- P.0483 Effect of polymer composition and protein adsorption on poly(MEO2MA-co-OEGMA) coated silver nanoparticle induced cytotoxicity
Christopher R Anderson, Chemical and Biomolecular Engineering, Lafayette College, Easton, PA, United States
- P.0485 Suppressing cavitation-induced noise from articulating ceramic implants
Robert E Baier, Industry/University Center for Biosurfaces, State University of New York at Buffalo, Buffalo, NY, United States
- P.0487 Development of drug-releasing shape-memory polyurethane/hydroxyapatite composites - smart biomaterial for bone tissue implants
Monika M Bil, Faculty of Materials Science and Engineering, Warsaw University and Technology, Warsaw, Poland
- P.0489 Bioactive titanium with visible-light induced antibacterial activity
Masakazu Kawashita, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan
- P.0491 Acrylic polymers bearing superwetting silicone surfactants are candidates for bacterial adhesion-resistant biomaterials
Madiha F Khan, Biomedical Engineering, McMaster University, Hamilton, ON, Canada
- P.0493 Chromatographic separation of bioactive compounds by using thermoresponsive polymer brush grafted capillary column
Takuya Koriyama, Tokyo University of Science, Tokyo, Japan
- P.0495 Cationic heptad amphiphiles show excellent antimicrobial activities, physiological stability and antibiofilm capabilities
Yinfeng Lyu, Northeast Agricultural University, Institute of Animal Nutrition, Harbin, P.R. China
- P.0497 Qualitative and quantitative analysis during corrosion of biodegradable magnesium-silver wires
Petra Maier, School of Mechanical Engineering, University of Applied Sciences Stralsund, Stralsund, Germany

15:00 - 16:30

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Poster Session 1A**Tissue engineering and regenerative medicine**

- P.0521 A novel functionalized chitosan-based nanoconstruct for targeted subcutaneous delivery of protein therapeutics in squamous cell carcinoma
Samson A Adeyemi, Pharmacy, University of the Witwaterstrand, Johannesburg, South Africa
- P.0523 Injectable thermosensitive chitosan/chondroitin sulfate hydrogels for intervertebral disc regeneration
Yasaman Alinejad, École de technologie supérieure (ETS), CHUM Research Center (CRCHUM), Montreal, QC, Canada
- P.0525 Electrospun ELR-like nano-fibrous scaffold with intra-fibrous mineralization for dentin-pulp regeneration
Conrado Aparicio, Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, MN, United States
- P.0527 Osteoporosis and ageing reduces the migration of stem cells but this is ameliorated by CXCR4
Gordon W Blunn, Institute of Orthopaedics, University College London, London, United Kingdom
- P.0529 Poly-l-arginine based materials as instructive substrates for in vivo synthesis of collagen
Kaitlin M. Bratlie, Materials Science & Engineering, Iowa State University, Ames, IA, United States
- P.0531 Fracture behaviour of nanofibrous hydrogel composites
Annabel L Butcher, Department of Engineering, University of Cambridge, Cambridge, United Kingdom
- P.0533 3D micropatterned porous scaffolds for skeletal muscle tissue engineering
Guoping Chen, Tissue Regeneration Materials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan
- P.0535 Development of an electrospun scaffold with tailorable void space for dermal wound regeneration
Ryan M Clohessy, Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States
- P.0537 Hydrogel encapsulation and micro-aggregation of co-culture MSC/AC for tissue regeneration
Mylene De Ruijter, Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.0539 Safety and absorption characterization of a novel dental collagen wound dressing
Meryem Demir, Research & Development, NovaBone Products, LLC, Alachua, FL, United States
- P.0541 Visualization of three-dimensional oxygen concentration for three-dimensional tissue culture
Naotoshi Doi, Toyama University, Toyama, Japan
- P.0543 Induction of adipose-derived stem cells on injectable nanofibrous spongy microspheres for vascularized adipose tissue regeneration in vivo
Yasmine R Doleyres, Macromolecular Sciences and Engineering Program, University of Michigan, Ann Arbor, MI, United States
- P.0545 Injectable hybrid hydrogel for stem cell delivery and skin wound healing, from PEG-based multifunctional hyperbranched polymers
Yixiao Dong, Department of Surgery, Stanford University, Stanford, CA, United States
- P.0547 "Mix-and-match" design of injectable poly(oligoethylene glycol methacrylate) hydrogels using different thermoresponsive precursors
Helen E Dorrington, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0549 Novel self-gelling, injectable composites for bone regeneration based on gellan gum hydrogel and calcium and magnesium carbonate microparticles
Timothy Douglas, Dept. Molecular Biotechnology, Faculty of Bioscience Engineering, Ghent University, Gent, Belgium
- P.0551 Tuning the release of encapsulated cells from injectable, fast degradable microbeads
Lorenza Draghi, Politecnico di Milano, Milano, Italy
- P.0553 Differentiation of embryonic stem cells into cardiomyocytes on polymeric substrates
Eliana E A R D Duek, Physiological Sciences Department, Pontifical University Catholic of São Paulo, Sorocaba, Brazil
- P.0555 Differential gene expression and phenotype during motor neuron differentiation of human induced pluripotent stem cells in 3D fibrin scaffolds
John M Edgar, Department of Biomedical Engineering, University of Victoria, Victoria, BC, Canada
- P.0557 Non-cultured adipose-derived cells promote the bone augmentation induced by low-dose BMP2
Kazuhiro Egashira, Department of Regenerative Surgery, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan
- P.0559 Utilising bioprocessing to create unique ion-substituted marine coccolith structures to aid bone remodelling
Kathryn M Fee, Bioengineering Research Group, Queen's University Belfast, Belfast, United Kingdom
- P.0561 A 3D Elastin-Like-Recombinamer approach toward reparative angiogenesis
Tatjana Flora, G.I.R. Bioforge, University of Valladolid, Valladolid, Spain
- P.0563 A modular glycosaminoglycan-based hydrogel platform to establish models of cancer angiogenesis
Uwe Freudenberg, Institute Biofunctional Polymer Materials / Max Bergmann Center of Biomaterials Dresden, Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany
- P.0565 Cryogels to establish immunotherapeutic organoids
Uwe Freudenberg, Institute Biofunctional Polymer Materials / Max Bergmann Center of Biomaterials Dresden, Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany
- P.0567 Neural tube morphogenesis in synthetic 3D microenvironments
Mehmet U Girgin, Institute of Bioengineering, École polytechnique fédérale de Lausanne, Lausanne, Switzerland

- P.0569 Repair of rotator cuff injury in rabbit animal model by in situ implantation of an injectable elastin-like recombinamer and allogeneic mesenchymal stem cells
Alessandra Girotti, Centro de Investigación Biomédica en Red Bioingeniería, Biomateriales y Nanomedicina, University of Valladolid, Valladolid, Spain
- P.0571 Fibronectin (nano)fibrils induced by materials: from 2D to 3D microenvironments
Jose Luis Gomez Ribelles, Centre for Biomaterials and Tissue Engineering, Universitat Politècnica de València, Valencia, Spain
- P.0573 Bioprinting 3D functional neural tissue using human neural and induced pluripotent stem cells
Qi Gu, Intelligent Polymer Research Institute, AIM Facility, Innovation Campus, University of Wollongong, New South Wales, Australia
- P.0575 Balancing osteoblast/osteoclast ratio in vitro by means of chitosan scaffolds either surficial sulfated or modified by hemocyanines and calcium phosphate phases. A co-culture study.
Thomas Hanke, Max-Bergmann-Center of Biomaterials, Technische Universität Dresden, Dresden, Germany
- P.0577 A novel porcine fibrinogen formulation for fabricating biodegradable hybrid scaffolds by electrospinning with poly(L-lactic acid-co- β -caprolactone)
Hongbing He, Pine&Power Biotech Co., Ltd, Shanghai, P.R. China
- P.0579 Engineering the intestinal basement membrane microenvironment using PEG-based hydrogels
Victor Hernandez-Gordillo, Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States
- P.0581 Electrospun nature mimicking hybrid scaffolds suitable for heart valve replacement
Svenja Hinderer, Cell and Tissue Engineering, Fraunhofer IGB, Stuttgart, Germany
- P.0583 Engineering a three-dimensional cancer model from lung extracellular matrix hydrogel
Yi Hong, University of Texas at Arlington, Arlington, TX, United States
- P.0585 Novel bone scaffold containing biomimetic peptide for bone tissue engineering
Samaneh Hosseini, Royan Institute for Stem Cell Biology and Technology, Tehran, Iran (Islamic Republic of)
- P.0587 Bioengineering multilamellated annulus fibrosus tissues using oriented nanofibrous polyurethane membranes
Jonathan lu, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0589 Decellularized extra cellular matrix derived tissue papers: creating simple and complex, tissue-specific constructs through integration of 2D casting and 3D-printing technologies
Adam E Jakus, Materials Science and Engineering, Simpson Querrey Institute for BioNanotechnology, Northwestern University, Chicago, IL, United States
- P.0591 Periodic bioactive nanomaterials to investigate the impact of geometric features on human mesenchymal stem cell differentiation
Gregor Kemper, Institut de Chimie & Biologie des Membranes & des Nano-objets Bordeaux, Pessac, France
- P.0593 Sprayed Calcium phosphate substrate induced bone-like without osseinducer supplements
Halima H Kerdjoudj, Odontology, University of Reims, Reims, France
- P.0595 Polyethylenimine modified calcium phosphate nanoparticles for efficient siRNA delivery and K-ras gene knockdown
Xiangdong Kong, Zhejiang Sci-Tech University, Hangzhou, P.R. China
- P.0597 Investigation of the BMP-2 adsorption to different solvent-treated 3D PCL scaffolds
Alicja Kosik, Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland
- P.0599 Calcium phosphate/polyelectrolyte multilayer coatings for sequential delivery of multiple growth factors
Liisa Kuhn, Reconstructive Sciences, University of Connecticut Health Center, Farmington, CT, United States
- P.0601 A postoperative treatment for Barrett's oesophagus using an injectable, therapeutic peptide hydrogel
Deepak Kumar, Materials Science Centre, University of Manchester, Manchester, United Kingdom
- P.0603 Glycol-chitosan/collagen/glyoxal hydrogels for vocal fold tissue engineering
Neda Latifi, Mechanical Engineering, McGill University, Montreal, QC, Canada
- P.0605 Partially enzymatic treatment to improve integrative repair of cartilage
Powei Lee, Exactech Taiwan, Hsinchu county, Taiwan
- P.0607 Hydrogel degradation modulates human iPSC-derived cardiomyocyte fates in 3D
Soah Lee, Stanford University, Stanford, CA, United States
- P.0609 Effects of porous chitosan composites combined with human umbilical cord mesenchymal stem cells on lumbar fusion
Lihua Li, Materials Science and Engineering, Jinan University, Guangzhou, P.R. China
- P.0611 Fabrication and characterization of injectable sulfated carboxymethylcellulose hydrogels for nucleus pulposus replacement
Huizi A Lin, Department of Biomedical Engineering, The City College of New York, Woodside, NY, United States
- P.0613 Matrix stiffness modulates dentin-pulp complex regeneration
Xiaohua Liu, Texas A&M University Baylor College of Dentistry, Dallas, TX, United States
- P.0615 Cellularised collagen-based scaffolds for engineering the vascular wall: a tri-culture study
Caroline Loy, Dept. Min-Met-Materials Engineering & CHU de Quebec, Research Center, Lab. for Biomaterials & Bioengineering (CRC-I), Quebec, QC, Canada

- P.0617 Oxygen releasing injectable chitosan-gelatin hydrogels for cardiac tissue repair
Sundar Madihally, Chemical Engineering, Oklahoma State University, Stillwater, United States
- P.0619 Surface modification of silicone implants with bioinspired antifouling hydrogels: a photochemical approach
Katharina Maniura, Biointerfaces, Empa Materials and Science Technology, St. Gallen, Switzerland
- P.0621 Physical and mechanical evaluation of novel flexible Chitosan/Bioactive glass composite foams crosslinked with adipic acid for tissue engineering scaffolds
Talita Martins, Department of Metallurgical and Materials Engineering, Federal University of Minas Gerais, Belo Horizonte, Brazil
- P.0623 Cell-interactive polymer/protein nanomaterials to in vitro tissue fabrication
Michiya Matsusaki, Department of Applied Chemistry, Osaka University, Graduate School of Engineering, Osaka, Japan
- P.0625 Cellular viability and outgrowth of cryopreserved particulated adult human allograft cartilage
Alex J McNally, Biologics, Exactech, Inc., Gainseville, FL, United States
- P.0627 Engineering advanced middle ear tissues: where biomimicry of vibrating surfaces connects to optimal organ function
Mario Milazzo, The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Italy
- P.0629 3D scaffold prepared by electrospun nanofibers for tissue engineering
Xiumei Mo, Department name, Donghua University, Shanghai, P.R. China
- P.0631 Novel tissue-binding phospholipid polymer hydrogels for mucosal tissue regeneration
Jiro Nagatomi, Bioengineering, Clemson University, Clemson, SC, United States
- P.0633 Differentiation of human umbilical cord mesenchymal stem cells using 5-azacytidine to generate a cardiac patch on thermo-responsive polymer.
Lakshmi R Nair, Tissue Culture Laboratory, Sree Chitra Tirunal Institute For Medical Sciences and Technology, Trivandrum, India
- P.0635 Osteogenic application of injectable gelatin-hyaluronan matrices: in vitro study with bone marrow mesenchymal stem cells
Wanting Niu, Orthopedics, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, United States
- P.0637 Development of functional biomaterials using RNA aptamer
Yusuke Nomura, Division of Medical Devices, National Institute of Health Sciences, Tokyo, Japan
- P.0639 A novel biomaterial derived from porcine tracheal mucosa for functional regeneration of airway epithelium.
Ju Young Park, Division of Integrative Biosciences and Biotechnology, Pohang University of Science and Technology (POSTECH), Pohang, Korea
- P.0641 Investigation of cardiomyocytes maturation platform using cell-derived matrix and poly(L-lactide-co-caprolactone) nanofiber
Kwideok Park, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea
- P.0643 Bioactive injectable hydrogel conjugated with a synthetic peptide for bone regeneration
Yoon Jeong Park, Department of Dental Regenerative Biotechnology, Oral Biochemistry, School of Dentistry, Seoul National University, Seoul, Korea
- P.0645 Manipulation of blended hydrogel matrix for 3D cell culture
Mathew Peter, Department of Biosciences and Bioengineering, Indian Institutes of Technology, Bombay, Mumbai, India
- P.0647 Three-dimensional collagen matrix contributes to a successful coverage of cutaneous skin cancer resection defects: Preclinical and preliminary translational studies
Fabian Raimund Peters, Research and Development, Curasan AG, Frankfurt am Main, Germany
- P.0649 Novel chitosan based microcarriers for chondrogenic stimulation of synovial fluid derived mesenchymal stem cells in suspension bioreactors
Jolene A Phelps, Chemical and Petroleum Engineering, Pharmaceutical Production Research Facility, Calgary, AB, Canada
- P.0651 Synthesis of PLGA microparticles of EGCG by a double emulsion-solvent technique and their anti-inflammatory effect to activated BV-2 cells by lipopolysaccharide
Hue Quoc Pho, Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan
- P.0653 Study of the impact of gelatin addition on the structure of dense phases of collagen type I
François Portier, Materials and Biology Team, Laboratoire de Chimie de la Matière Condensée de Paris, Sorbonne Universités, UPMC Université, CNRS, Collège de France, Paris, France
- P.0655 Synthetic polymers for cellular cryopreservation: A new and versatile class of cryoprotectants
Robin Rajan, School of Materials Science, Japan Advanced Institute of Science and Technology, Nomi, Japan
- P.0657 Enhancing endothelialization by promoting endothelial cell competitiveness and endothelial function on soft polyelectrolyte multilayer film with matrix-bound VEGF
Kefeng Ren, Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.0659 Preparation and characterization of an injectable strontium-rich hybrid system for bone regeneration
Cristina C Ribeiro, Physics, Instituto Superior de Engenharia do Porto (ISEP), Instituto de Engenharia Biomédica (INEB), Porto, Portugal
- P.0661 Ceramic scaffolds containing sodium alendronate loaded poly(lactide-co-glycolide) microparticles for bone tissue engineering
Lucja D Rumian, Faculty of Materials Science and Ceramics, Department of Biomaterials, AGH - University of Science and Technology, Krakow, Poland
- P.0663 Degradation and endothelial cell compatibility of a vascular biomaterial designed from a tunable poly(lactide-co-caprolactone) terpolymer nanofiber scaffold
Gad Sabbatier, Chemical Engineering/ Human Mobility Research Center, Queen's University, Kingston, ON, Canada

- P.0665 The HONEY: a radially-compliant scaffold for osteochondral defects of a critical size
Stefania Scialla, Department of Engineering for Innovation, University of Salento, Lecce, Italy
- P.0667 Collagen-PEG composite microspheres for bone regeneration
Candice M Sears, Department of Biomedical Engineering, Texas A&M University, College Station, TX, United States
- P.0669 Biodegradable zwitterionic hydrogels that form in situ under mild and cytocompatible conditions
Andrew Sinclair, University of Washington, Seattle, WA, United States
- P.0671 Mineralization of PLGA microfibers through jet-spraying for periodontal regeneration
Jerome Sohler, CNRS - IBCP, Lyon, France
- P.0673 In situ forming gelatin hydrogel by fenton reaction for biomedical application
Joo Young Son, Ajou University, Suwon, Korea
- P.0675 The effect of collagen:fibrin blends and conditioning on myogenic cell proliferation and potential
Sarah J Stagg, Biomedical Engineering, University of Texas at San Antonio, San Antonio, TX, United States
- P.0677 Carbon nanofibers (CNF) as scaffolds for osteochondral tissue regenerative medicine
Ewa Stodolak-Zych, Department of Biomaterials, UST-AGH University of Science and Technology, Krakow, Poland
- P.0679 Design, development and evaluation of synthetic scaffolds for retinal tissue engineering
Denver C Surrao, Faculty of Health Sciences and Medicine, Bond University, Gold Coast, Australia
- P.0681 Using surface chemistry to regulate behaviour of mesenchymal stem cells
Paula E Sweeten, Centre for Cell Engineering, University of Glasgow, Glasgow, United Kingdom
- P.0683 Osteomimetic graphene composite scaffolds for bone regeneration
Stefanie A Sydlík, Chemistry, Carnegie Mellon University, Pittsburgh, PA, United States
- P.0685 Biomimetic micro-nanostructured scaffold for tracheal long-segments regeneration
Cristina Tanzi, Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milano,
- P.0687 Mechanical evaluation of selectively absorbable mesh in a mature ventral hernia rabbit model
Michael Scott Taylor, Poly-Med, Inc., Anderson, SC, United States
- P.0689 Characterization and evaluation of mechanical properties of injectable porous spherical nano-hydroxyapatite/chitosan particles for craniofacial bone regeneration
Suren P Uswatta, Bioengineering, University of Toledo, Toledo, OH, United States
- P.0691 Surface phosphorylated polyethylene terephthalate fibrous matrix: an efficient scaffold with biomineralization potential for bone tissue engineering applications
Harikrishna PR Varma, Bioceramics Laboratory, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India
- P.0693 Modulation of in vivo immune response - a feasible strategy for improving bone repair/regeneration
Daniel M Vasconcelos, INEB - Instituto de Engenharia Biomédica, Porto, Portugal
- P.0695 Tea polyphenol-mediated catalytic coating applied in cardiovascular materials
Jin Wang, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.0697 Growth factor-encapsulated and cell-laden nanofibrous scaffolds for vascular regeneration
Min Wang, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- P.0699 Hydrogel-based Kidney Tubulogenesis Model for Drug Toxicity Applications
Heather M Weber, Leibniz Institute of Polymer Research Dresden, Dresden, Germany N/A
- P.0701 Si-HPMC and Si-chitosan hydrogel for tissue engineering
Pierre Weiss, Dental Biomaterial, University of Nantes, Institut National de la Santé et de la Recherche Médicale (INSERM), Nantes, France
- P.0703 Self-assembled multifunctional nanogel reduces the expression of proinflammatory cytokines to induce apoptosis in epithelial cancer cells
Richard Williams, School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University, Bundoora, Australia
- P.0705 Sandwich culture of mesenchymal stem cells between bio-functional hydrogels as a novel 3-D culture method for regulating their osteoblastic differentiation
Masaya Yamamoto, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan
- P.0707 Immobilization of chiral selenocystine on TiO₂ films for in situ catalytic generation of Nitric Oxide
Ping Yang, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.0709 Fabrication and characterization of novel biomimetic alveolar clusters
Ying Yang, Institute for Science and Technology in Medicine, Keele University, Newcastle-under-lyme,
- P.0711 Injectable chitosan hydrogels as doxycycline delivery system for Abdominal Aortic Aneurysm treatment
Fatemeh Zehtabi, mechanical engineering, École de technologie supérieure, Montreal, QC, Canada
- P.0713 Functionalized mesoporous bioactive glass scaffolds for enhanced bone tissue regeneration
Deliang Zeng, Department of Prosthodontics, The Ninth People's Hospital affiliated to Shanghai Jiao Tong University, School of Medicine, Shanghai, P.R. China

- P.0715 Macroporous injectable hydrogels for neural engineering
Marcy Zenobi-Wong, Health Sciences & Technology, ETH Zürich, Zurich, Switzerland
- P.0717 Modulation of macro-, micro- and nano-structures of porous bioceramic scaffolds for regenerative bone tissue
Bingjun Zhang, Southwest Jiaotong University, Chengdu, P.R. China
- P.0719 Self-oxygenating scaffolds for anoxic culture of adipose tissue
Huaifa Zhang, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- P.0721 3D-Printed FGF-incorporated silk scaffold for skin regeneration
Shufang Zhang, Center for Stem Cells and Tissue Engineering, School of Medicine, Zhejiang University, Hangzhou, P.R. China
- P.0723 Investigation of cell seeding and culture conditions for vascular smooth muscle cell culture on a degradable polyurethane scaffold
Xiaoqing Zhang, IBBME, University of Toronto, Toronto, ON, Canada
- P.0725 Development of biphasic scaffolds with distinct mechanical properties for the regeneration of osteochondral interface
Zheng Zhang, Mosaic Biosciences, Boulder, CO, United States
- P.0727 Hydroxyapatite/silk fibroin composite microspheres loaded with methotrexate for repairing giant cell tumor-associated bone defects
Caihong Zhu, Orthopedic Institute, Soochow University, Suzhou, P.R. China
- P.0729 Additive manufacturing of bio-ceramics for bone repair
Ghislaïne Bertrand, Université Paul Sabatier, CIRIMAT, Toulouse, France
- P.0731 SEP cross-linked porous silk fibroin/PVA scaffolds for tissue regeneration: fabrication, characterization and cyto-compatibility studies
Mahesh K Sah, Department of Biomedical Engineering, Indian Institute of Technology Hyderabad, Medak, India
- Vishal Bhargava**, Guru Teg Bahadur Charitable Hospital, Kanpur, India
- P.0751 Translational study of nanostructure carbonated hydroxyapatite: from the bench to the bed
Monica Calasans-Maia, Oral Surgery Department, Fluminense Federal University, Rio de Janeiro, Brazil
- P.0753 Comparison of cytokine response to anti-inflammatory modulators
Alda Alexa Diaz Perez, Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR, United States
- P.0755 Degradation products of extracellular matrix bioscaffolds derived from diverse source tissues differentially influence macrophage phenotype
Jenna L Dziki, McGowan Institute for Regenerative Medicine, Pittsburgh, PA, United States
- P.0757 Topographical modulation of titanium implant surfaces to control microbial viability
Leanne E Fisher, Biomaterials Engineering Group, University of Bristol, Bristol, United Kingdom
- P.0759 Nanobiointeraction of particulate matter in the blood circulation
Antonietta M Gatti, ISTE, National Council of Research of Italy, San Vito, Italy
- P.0761 Organic bioelectronics create ionic microenvironments of inflammation and infection on phospholipid polymer to elucidate molecular dynamics of C-reactive protein
Tatsuro T Goda, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- P.0763 Effect of sodium azide concentration on wear and bacteria growth in a hip simulation test
Elizabeth Hippensteel, Tribology, DePuy Synthes Joint Reconstruction, Warsaw, IN, United States
- P.0765 Combination nanovaccine rapidly protects animals from Yersinia pestis challenge
Sean M Kelly, Chemical and Biological Engineering, Iowa State University, Ames, CO, United States
- P.0767 Development of an antimicrobial endotracheal tube
Jun Li, Research, Teleflex, Cambridge, MA, United States
- P.0769 Inhibiting biomaterials-associated infection using microgels to sequester antimicrobials
Jing Liang, Chemical Engineering and Materials Science, Stevens Institute of Technology, Hoboken, NJ, United States
- P.0771 Poly(ethylene glycol)-containing hydrogels provide innate protection against *S. aureus* via promotion of polymorphonuclear leukocyte primary degranulation
Tyler J Lieberthal, Department of Bioengineering, Imperial College London, London, United Kingdom
- P.0773 N-acetyl cysteine-functionalized coating avoids bacteria adhesion and biofilm formation
M. Cristina L Martins, INEB - Instituto de Engenharia Biomédica / I3S - Instituto de Investigação e Inovação em Saúde, Porto, Portugal

15:00 - 16:30

220bcd (P4)

Poster Session 1A**Biomaterials and host response**

- P.0741 Locally delivered iloprost via microdialysis sampling modulates macrophage activation and monocyte chemotactic protein 1 production
Kamel Alkhatib, Chemistry and Biochemistry Department, University of Arkansas, Bentonville, AR, United States
- P.0743 Control of myofibroblast phenotype by paracrine TGF- β and IL-10 signals in a biomimetic wound healing model
Ulf Anderegg, Department of Dermatology, Leipzig University, Leipzig, Germany
- P.0745 Characterisation and Biocompatibility of Composite Ceramic Particles Used to Manufacture Ceramic-on-Ceramic Total Hip Replacements
Imran M Asif, Institute of Medical and Biological Engineering, Leeds, United Kingdom
- P.0747 Peptide amphiphile micelles as a vaccine platform for *Streptococcus pyogenes*
John C Barrett, Institute for Molecular Engineering, University of Chicago, Chicago, IL, United States
- P.0749 Combining Hepatitis B surface antigen (HBsAg) with Anthrax (rPA) for a single oral vaccine

15:00 - 16:30

220bcd (P4)

- P.0775 A study on the damage induced by carbon-fibers debris in humans
Antonio Merolli, Orthopedic Department, Universita Cattolica, Rome, Italy
- P.0777 Influence of mesh structure on surgical healing in abdominal wall hernia repair
Eric D Nelson, Grant Technologies, Boise, ID, United States
- P.0779 Syntheses of biocompatible polyimide and poly(amide-imide) containing phosphorylcholine moiety and the coating ability of the nanosheets
Mari Ogino, Course of Industrial Chemistry, Graduate School of Engineering, Tokai University, Kanagawa, Japan
- P.0781 Impact of polymeric fibers on antigen presenting dendritic cells
Rafaella Takehara Paschoalin, Embrapa Instrumentation (LNNa), Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.0783 CXCL12 as innovative immune isolating chemokine for microencapsulated allo and xeno-transplantation in NHPs
Marinko Sremac, Division of Infectious Diseases, Harvard Medical School / Massachusetts General Hospital, Charlestown, MA, United States
- P.0785 An organic chemistry approach to the surface modification of biomedical devices to limit bacterial adhesion and blood coagulation
Benoit Rhone, Team COCP, CNRS, Institut de recherche de Chimie Paris, PSL University, Chimie ParisTech, Paris, France
- P.0787 Adaptive immunity and protection generated by nanoparticle-based vaccination against influenza virus
Kathleen A Ross, Chemical & Biological Engineering, Iowa State University, Ames, IA, United States
- P.0789 In vitro inflammatory cell response to ultra-thin hydroxyapatite surfaces
Louise Rydén, Biomaterials, Clinical Sciences, Gothenburg, Sweden
- P.0791 Critical roles of clindamycin on human mesenchymal stem cells in vitro and in vivo bone regeneration
Sarita R Shah, Department of Bioengineering, Rice University, Houston, TX, United States
- P.0793 A novel soft tissue model for biomaterial-associated infection and inflammation
Sara Svensson, Department of Biomaterial, Institute of Clinical Sciences, Gothenburg, Sweden
- P.0795 Degradation in the jar: optimising the in vitro enzymatic degradation of collagen-based devices
Eleni Tsekoura, Chemical & Materials Engineering, University of Alberta, Edmonton, AB, Canada
- P.0797 Bacterial cellulose and bacterial cellulose/polycaprolactone composite as tissue substitutes in rabbit corneas
Fabricao L Valente, Departamento de Veterinaria, Universidade Federal de Vicosa, Vicosa, Brazil
- P.0799 Development of nano electrodes for cell/tissue stimulation
Tobias Weigel, Chair Tissue Engineering & Regenerative Medicine, University Hospital Würzburg, Würzburg, Germany

Poster Session 1A**Innovation in fabrication**

- P.0801 Thermo-sensitive polysaccharide based-hydrogels with tunable rheological properties: a novel class of bioinks for cartilage 3D-bioprinting
Anna Abbadessa, Pharmaceutics, Utrecht University, Utrecht, Netherlands
- P.0803 Alginate composition, temperature, and presence of islet tissue influence microcapsule permeability
Michael Alexander, University of California Irvine, Orange, CA, United States
- P.0805 Highly performance OECTs made by inkjet-printing for glucose sensing on paper
Eloise Bihar, Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne, Gardanne, France
- P.0807 Engineering of a biomimetic, hierarchically structured bone substitute based on a hybrid composite scaffold containing human bone particles
Michel M Boissiere, Department of Biology, University of Cergy-Pontoise, Cergy Pontoise, France
- P.0809 Manufacturability of superelastic nickel-free porous structures for load-bearing medical implants using the space holder and selective laser melting technologies
Vladimir Brailovski, Mechanical Engineering, Ecole de Technologie Supérieure, Montreal, QC, Canada
- P.0811 Near infrared light assisted transdermal polymerization of thiol-acrylate hydrogels
Solchan Chung, School of Material Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Korea
- P.0813 The development of a novel cold isostatic pressing and gelling protocol for a calcium polyphosphate-based local delivery system in osteomyelitis therapy
Patricia A Comeau, Systems Design Engineering, University of Waterloo, Kitchener, ON, Canada
- P.0815 Design of a protease and ROS responsive biomaterial approach to target drug delivery in inflamed tissue microenvironment
Paolo Contessotto, Centre for Research in Medical Devices (CÚRAM), School of Engineering and Informatics, National University of Ireland, Galway, Ireland
- P.0817 Increased modulus and toughness of biocompatible thiol-ene hydrogel using novel fabrication technique
Callie I Fiedler, Electrical, Computer, and Energy Engineering, University of Colorado Boulder, Denver, CO, United States
- P.0819 Rapid prototyping of tissue scaffolds by 3D printing of gelatine
Hagit Gilon, 3D Printing and Additive Manufacturing Research Group, University of Nottingham, Nottingham, United Kingdom
- P.0821 Designing polymeric biomaterial inks for 3D printing
Murat Guvendiren, New Jersey Center for Biomaterials, Rutgers University, Piscataway Township, NJ, United States
- P.0823 Polymer particle formation using inkjet printing
Amanda Hüslér, School of Pharmacy, Additive Manufacturing and 3D Printing Research Group, University of Nottingham, Nottingham, United Kingdom

- P.0825 Laser diode based ultrafast crosslinking of cell-encapsulated gelatin methacrylate hydrogels
Keekyoung Kim, School of Engineering, University of British Columbia Okanagan Campus, Kelowna, BC, Canada
- P.0827 Strategies to overcome tissue hypoxia in islet encapsulation
Jonathan RT Lakey, Surgery, University of California, Irvine, CA, United States
- P.0829 Development of hyaluronic acid based multi functional bio-ink for bone tissue regeneration
Jaeyeon Lee, Biomedical Engineering, Korea University, Seoul, Korea
- P.0831 The study of biobinder droplet impacting on HA particle surface depending on nondimensional scale similarity theory
Xinpei Li, NPU, Xi'an, P.R. China
- P.0833 Visible light polymerised hydrogels with improved cell survival and metabolic activity
Khoon S Lim, Christchurch Regenerative Medicine and Tissue Engineering Group, University of Otago, Christchurch, New Zealand
- P.0835 Silk fibroin hydroxyapatite composite thermal stabilisation of carbonic anhydrase
Geraldine EL Merle, McGill University, Montreal, Canada
- P.0837 In vivo implantation and perfusion of a gel containing 3D printed internal microvascular networks
Samantha J Paulsen, Bioengineering, Rice University, Houston, TX, United States
- P.0839 Direct printing of living cell composed 3D objects with complex and large shape: a scaffold-free approach
Léa Pourchet, Institut de Chimie et Biochimie Moléculaires et Supramoléculaires (ICBMS), Université de Lyon 1, Lyon, France
- P.0841 Mesoscopically ordered and 3D printed nanocomposites inspired from the ligament-bone interface
Anand K Rajasekharan, Applied Chemistry, Chalmers University of Technology, Gothenburg, Sweden
- P.0843 Enhanced bone regeneration of 3D printed scaffolds in rabbit long bone defect
Kyung Mi Shim, Department of Veterinary Surgery, Chonnam National University, Gwangju, Korea
- P.0845 Antimicrobial-loaded mesoporous silica for dental and medical implant coatings
Alvina Siu, University of Toronto, Markham, ON, Canada N/A
- P.0847 Decellularised extracellular matrix as a platform for cancer modelling
Kyriakos M Spanoudes, SFI Centre for Research in Medical Devices (CÚRAM), National University of Ireland, Galway, Ireland
- P.0849 Drug loaded mesoporous silica nanoparticles for antimicrobial applications
Cameron A Stewart, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0851 3D Plotting of thiol-ene cross-linked Polyglycidol hydrogels with hyaluronic acid as transient rheological additive
Simone Stichler, Department for Functional Materials in Medicine and Dentistry, University of Wuerzburg, Wuerzburg, Germany
- P.0853 Research on fabrication and water absorption properties of a novel textile based debridement material
Lu Wang, College of Textiles, Donghua University, Shanghai, P.R. China
- P.0855 Effect of composition and macropore percentage on mechanical and biological properties of 3D precision biomimetic fabrication HA/ β -TCP scaffold in vitro
Yanen Wang, Industry Engineering of Mechanical Engineering School, Northwestern Polytechnical University, Xi'an, Shaanxi, P.R. China
- P.0857 Study the bonding mechanism of binders on hydroxyapatite surface and mechanical properties for 3dp fabrication bone scaffolds: a molecular dynamics method
Qinghua Wei, School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an, P.R. China
- P.0859 Jacquard weaving technology reimaged to manufacture biomimetic three dimensional scaffolds for tissue regeneration, creating a textile trachea
Seth A Winner, Emerging Technologies, Secant Medical, Telford, PA, United States
- P.0861 Development of a novel bioprinting system for hybrid tissue engineering constructs of biomimetic complexity
Yunzhi Yang, Orthopedic Surgery, Stanford University, Stanford, CA, United States
- P.0863 Gelation of collagen under shearing to create a thick gel composed of uniaxially aligned fibrils
Shunji Yunoki, Tokyo Metropolitan Industrial Technology Research Institute, Tokyo, Japan
- P.0865 Synthesis of a novel clay-based nanocomposite hydrogel with attractive mechanical properties and its potential application in 3D-Printing
Xinyun Zhai, Department of Orthopaedics and Traumatology, The University of Hong Kong, Hong Kong, Hong Kong
- P.0867 Porphyrin micro-nano particles mimicking viral morphology and influence of their roughness on endocytosis
Wenbo Zhang, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China

15:00 - 16:30

220bcd (P5)

Poster Session 1A**Mechanics and modeling biomaterials science and engineering**

- P.0871 Mechanical performance and bone-contactability of beta-type Ti-Nb-Ta-Zr system alloy subjected to various mechanical surface modification processes
Toshikazu Akahori, Materials Science and Engineering, Meijo University, Nagoya, Japan
- P.0873 Biocompatible mechanical surface modification processing and mechanical properties of beta-type titanium alloys
Akinori Ban, Meijo University, Nagoya, Japan
- P.0875 Effect of embedded beads distribution on cellular traction force analysis
Yiting Chang, Mechanical Engineering, National Taiwan University, Taipei, Taiwan
- P.0877 Temperature and pH Dependent Degradation of AH6 3:1 and AH6 5:1 Poly(beta-amino ester) Polymers
Alexander J Chen, Biomedical Engineering, University of Kentucky, Lexington, KY, United States
- P.0879 Understanding spatiotemporal degradation of enzyme-sensitive hydrogels for cartilage tissue engineering
Stanley C Chu, Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO, United States
- P.0881 Fatigue performance of a Ti-6Al-4V femoral prosthesis modified by thermal plasma spray
Bolfarini Claudemiro, Materials Engineering, Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.0883 Characterization of aligned collagen yarns for biomedical textile fabrication
Hui Cong, College of Textiles, North Carolina State University, Raleigh, NC, United States
- P.0885 Characterization of microdamage accumulation in metastatically-involved vertebrae
Hamid Ebrahimi, University of Toronto, Toronto, ON, Canada
- P.0887 Cryogel micromechanics unraveled by atomic force microscopy-based nanoindentation
Jens Friedrichs, Institute of Biofunctional Polymer Materials, Leibniz Institute of Polymer Research, Dresden, Germany
- P.0889 Use of non-adherent hydrogels to control the behaviour of human hepatocarcinoma cell lines
Jordi Gonzalez-Molina, Division of Medicine, University College London, London, United Kingdom
- P.0891 In vitro investigation of the response of human corneal epithelial cells to shear stress
Maud Gorbet, Systems Design Engineering, University of Waterloo, Waterloo, Canada
- P.0893 Influence of nanotopography on MC-3T3 cell adhesion and filopodia formation
Dainelys Guadarrama Bello, Department of Stomatology, Université de Montreal, Montreal, QC, Canada
- P.0895 Estimation of the acetabular cup implant stability using impact analysis
Guillaume Haiat, Laboratoire de Modelisation et Stimulation Multi-Echelle, CNRS, Creteil, France
- P.0897 Tunable viscoelastic polydimethylsiloxane substrates for cell mechanics and mechanobiology applications
Hossein K Heris, Bioengineering, McGill University, Montreal, QC, Canada
- P.0899 Fibrillar nanomechanics of cartilage collagen and changes associated with compositional degradation
Sheetal R Inamdar, School of Engineering and Material Science, Queen Mary University of London, Institute of Bioengineering, London, United Kingdom
- P.0901 Poro-viscoelastic models applied to porous gelatin scaffolds
Audrey Lainé, Department of Min-Met-Material Engineering, Laval University, Quebec, QC, Canada
- P.0903 Mechanical properties and microstructure of biomedical titanium alloys subjected to friction stir process
Akihiro Mizutani, Meijo University, Nagoya, Japan
- P.0905 Echinoderm connective tissue as a dynamic mechanically responsive biomaterial: insights from synchrotron small-angle X-ray scattering with in situ tensile testing
Jingyi Mo, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- P.0907 A computational tool for the study of biodegradable composites
Ismael Moreno-Gomez, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
- P.0909 Electric stimulation induced by polarized hydroxyapatite regulates osteoblast proliferation through ERK activation
Akiko Nagai, Material Biofunctions, Institute Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- P.0911 Improvement of mechanical properties of beta-type Ti-Cr system alloy by heat treatment and mechanical surface modification processing.
Kentaro Niwa, Meijo University, Nagoya, Japan
- P.0913 The resistance to torque of head fixation of stemmed femoral components
Patricia Ortega Cubillos, Mechanical Department, Universidade Federal de Santa Catarina, Florianópolis, Brazil
- P.0915 Prediction and measurement of apparent elastic moduli in porous additive manufactured materials for new generation of hip implants
Fernando J Quevedo González, Génie de la Production Automatisée, École de Technologie Supérieure, Montreal, QC, Canada
- P.0917 Tough, injectable and cytocompatible double networks through tandem crosslinking
Christopher B Rodell, Bioengineering, University of Pennsylvania, Philadelphia, PA, United States
- P.0919 Mechanical properties of titanium-niobium alloy and morphological characterization of nanotubes obtained by anodizing technique
Aline Rossetto Da Luz, Programa de Pós-Graduação em Engenharia e Ciência dos Materiais, Universidade Federal do Paraná, Curitiba, Brazil

15:00 - 16:30

220bcd (P5)

- P.0921 High-throughput platform to investigate effects of dynamic presentation of mechanical and biochemical matrix cues on VIC phenotype
Megan E Schroeder, Materials Science and Engineering-Biomaterials, University of Colorado Boulder, Boulder, CO, United States
- P.0923 Reinforced thermoplastic composite materials for use in orthopaedics
Radek Sedlacek, Department of Mechanics, Biomechanics and Mechatronics, Czech Technical University in Prague, Faculty of Mechanical Engineering, Prague, Czech Republic
- P.0925 Influence of Seating Load, Loading Rate, and Design Parameters on the Connection Strength of Modular Tapers
Aarti Shenoy, Syracuse University, Syracuse, NY, United States
- P.0927 Stochastic porous metallic structures for biomedical application: mesoscale modeling, manufacturing and testing
Charles Simoneau, Department of Mechanical Engineering, Ecole de technologie (ETS), Montreal, QC, Canada
- P.0929 In-vitro fatigue fracture of hips stems - Is the ISO standard valid?
Todd D Stewart, Mechanical Engineering, The University of Leeds, Leeds, United Kingdom
- P.0931 Systemic distribution and biological safety of mesoporous bioactive glass nanoparticles by 45Ca labeling, tracing, and histological evaluation
Jiao Sun, Shanghai Biomaterials Research & Testing Center, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, P.R. China
- P.0933 Thickness sensing of nerve cells on double-layered hydrophobic polymer networks with distinct mechanical properties
Shanfeng Wang, Department of Materials Science and Engineering, and Institute of Biomedical Engineering, The University of Tennessee, Knoxville, TN, United States
- P.0935 Numerical simulation on bone scaffolds biodegradation on account of multi-physics coupling model
Yi Wei, Northwestern Polytechnical University, Xi'an, P.R. China
- P.0937 A study of the heat treatments in a Ti-15Zr-xMo alloy
Caio Castanho Xavier Sr, Physics, Unesp/Bauru, Bauru, Brazil
- P.0939 A multipass "low-strain-per-pass" thermomechanical processing for strengthening biomedical Co₂Cr₂Mo alloys
Kenta Yamanaka, Institute for Materials Research, Tohoku University, Sendai, Japan
- P.0941 Feasibility of titanium components additively manufactured by electron beam melting: Microstructural and mechanical considerations
Kenta Yamanaka, Institute for Materials Research, Tohoku University, Sendai, Japan
- P.943 Effect of crevice width on pH drop in a titanium crevice due to corrosion
Guigen Zhang, Bioengineering, Clemson University, Clemson, SC, United States

Poster Session 1A**Surfaces and interfaces**

- P.945 Development of self-healing calcium phosphate coating on biodegradable metallic implant materials
Afrah A Al Hegy, Material Science, Laurentian University, Sudbury, ON, Canada
- P.947 Fibrin and collagen structures on nanofibrous membranes as carriers for skin cells
Marketa Bacakova, Dept. of Biomaterials and Tissue Engineering, Institute of Physiology, Czech Academy of Sciences of the Czech Republic, Prague, Czech Republic
- P.949 Photocleavable hydrogel-coated LiYF₄:Yb³⁺/Tm³⁺ NIR to UV-Vis-NIR upconverting nanoparticles for on-demand drug delivery and bioimaging
Marta Cerruti, Mining and Materials Engineering, McGill University, Montreal, Canada
- P.951 Micellar delivery of paclitaxel using a glucosamine-based glycopolymer for the treatment of prostate cancer
Alice W Du, Centre for Macromolecular Design, University of New South Wales, Kensington, Australia
- P.953 Control of cell-material interactions through the use of mechanical nanoheterogeneities
Christine Dupont-Gillain, Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, Louvain-la-Neuve, Belgium
- P.955 Surface design of c.p titanium and Ti6Al4V by plasma electrolytic oxidation (PEO) to improve biological behavior
Mónica Echeverry-Rendón, Material Science Department, University of Antioquia (UMCG), Antioquia, Colombia
- P.957 PEG-PLGA nanoparticles : investigation of BBB translocation according to PEG chain length using a primary endothelial cell permeability model
Soudeh F Tehrani, Pharmacy Faculty, University of Montreal, Montréal, QC, Canada
- P.959 Interaction between single strands of siRNA and different chemical groups
Lucie Giraud, Faculty of Pharmacy, University of Montreal, Montreal, QC, Canada
- P.961 Graphene nanoplatelets biocompatibility is improved by surface adsorption of polymers
Inês C Gonçalves, Instituto de Engenharia Biomédica (INEB), Porto, Portugal
- P.963 Magnetically triggered smart liposomes
Md Shahriar A Hossain, Engineering, Australian Institute for Innovative Materials, North Wollongong, Australia
- P.965 Nano-coating on Ti-based biomaterials to enhance bone osseointegration
John Hunt, Director of U.K. Centre for Tissue Engineering and Head of Unit of Clinical Engineering, Institute of Ageing and Chronic Disease, Liverpool, United Kingdom
- P.967 Graphene oxide reduction as a result of cells activity
Ilona Kalaszczynska, Department of Histology and Embryology, Medical University of Warsaw, Warsaw, Poland

- P.969 Carbon nanomaterials reinforced poly(lactic-co-glycolic acid) composites for bone tissue engineering
Tejinder Kaur, Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela, India
- P.971 Advanced nanofibrous mesh with integrated flexible heater for on demand drug delivery
Ali Khademhosseini, Harvard/ Massachusetts Institute of Technology, Cambridge, MA, United States
- P.973 Core-shell polyurethane nanofibers with shape memory for drug release applications
Ewa Kijenska, Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland
- P.975 A comprehensive assessment of biological responses to silicon nitride nanoparticles and cobalt chromium wear debris from total hip replacements
Saurabh Lal, School of Biomedical Sciences, University of Leeds, Leeds, United Kingdom
- P.977 Therapeutic efficacy of radioactive nanoparticles $^{103}\text{Pd}:\text{PdAu}$ -PEG NPs in a PC3 prostate cancer xenograft model
Myriam Laprise-Pelletier, Université Laval, Quebec, QC, Canada
- P.979 Development of a biodegradable plasma polymer matrix by dielectric barrier discharge
Morgane AS Laurent, Département de Génie des Mines, de la Métallurgie et des Matériaux, Université Laval, Quebec, QC, Canada
- P.981 Concentration dependent cytotoxicity evaluation of graphite nanoparticles as wear debris of DLC film in biomedical application
Tingting Liao, School of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.983 Surface Topography of Implants Drives Bone Anchorage
Robert S Liddell, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada
- P.985 Drug delivery into multicellular tumor spheroids (MCTS) by polymeric micelles
Hongxu Lu, Centre for Advanced Macromolecular Design, School of Chemistry, University of New South Wales, Sydney, Australia
- P.987 Liposomes of artificial 1,3-diamidophospholipids hardly show complement activation in vitro and hemodynamic changes in pigs.
Bert Müller, Department of Biomedical Engineering, University of Basel, Allschwil, Switzerland
- P.989 Construction of nanostructure on tantalum and its effect on primary osteoblast behaviors
Jiahua Ni, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China
- P.991 Atomic layer deposition of alumina films on segmented polyurethane microfiber scaffold sheet: in-vivo blood compatibility
Yasuharu Ohgoe, Tokyo Denki University, Saitama, Japan
- P.993 Does topography dominate over chemistry in the fibrotic response? An investigation comparing titanium and PLGA implants with identical topography.
Gethin R Owen, Oral, Biological and Clinical Science, University of British Columbia, Vancouver, BC, Canada
- P.995 Synthesis of free-standing bio-functional nanofilms by plasma assisted technology
Daniela Pignatelli, Center for Micro-Biorobotics, Italian Institute of Technology, Pontedera, Italy
- P.997 Synthesis of thin-film of nanograined titania by high frequency laser pulses for osseointegration and implant fabrication
Mitra Radmanesh, Mechanical Engineering, University of New Brunswick, Fredericton, NB, Canada
- P.999 Surface modification of polymeric nanoparticles with human adipose derived Stem cell membranes AdMSCs
Jagathesh Chandra Bose Rajendiran, School of Integrative Engineering, Chung-Ang University, Seoul, Korea
- P.1001 Dexamethasone-loaded TiO₂ nanoparticles to locally target wear-debris induced inflammation
Melissa Rivera Rodrigues, School of Pharmacy and School of Dentistry, Cardiff University, Cardiff, United Kingdom
- P.1003 Surface modifications at the nanoscale for a better integration of titanium implants to the hard and soft tissues
Silvia Spriano, DISAT, Politecnico di Torino, Torino, Italy
- P.1005 Cell proliferation and integration by micron/sub-micron surface roughness on Ti6Al4V
Pavan Kumar Srivas, School of Medical Science & Technology, IIT Kharagpur, Kharagpur, India
- P.1007 Value-added functional textiles by plasma-based surface modification
Ranna Tolouei, Laval University, Quebec, QC, Canada
- P.1009 Nanoparticle-based nonviral delivery of siRNA in zebrafish heart: gene silencing efficiency and siRNA biodistribution
Fang Wang, Peking University, Beijing, P.R. China
- P.1011 "Sandwich"[™]-type nanofiber skin grafts for diabetic wound healing
Jingwei Xie, Surgery, University of Nebraska Medical Center, Omaha, NE, United States
- P.1013 Theranostic pH responsive doxorubicin loaded nanoparticles inducing active targeting and Apoptosis for Advanced Gastric Cancer
Malcolm M Xing, Mechanical Engineering, University of Manitoba, Winnipeg, MB, Canada
- P.1015 Biocompatible evaluation of magnesium-containing MAO coating developed on Ti6Al4V alloy
Ying Zhao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
- P.1017 Biomimetic mineralization of collagen fibers with iron oxide
Michael E Zilm, University of Connecticut, Storrs, CT, United States

15:00 - 16:30

220bcd (P6)

Poster Session 1A**Clinical performance of biomaterials**

- P.1031 Standardized evaluations of mechanical properties of biodegradable Mg strengthened poly-lactic acid composite through interfacial Properties
Muhammadshoib Butt, School of Material Science and Engineering, Southeast University, Dahka, P.R. China
- P.1033 Evaluation of BMSC viability at the cell-biomaterial interface with Mg-xSr and Mg-1Ca-xSr alloys
Aaron F Cipriano, Department of Bioengineering, University of California, Riverside, Riverside, CA, United States
- P.1035 Degradable Mg scaffolds produced by selective laser melting
Michael De Wild, University of Applied Sciences Northwestern Switzerland, Institute for Medical and Analytical Technologies, Muttenz, Switzerland
- P.1037 Assessment on the inflammatory reaction during the implantation of biodegradable metal implants in mice
Hendra Hermawan, Mining, Metallurgical and Materials Engineering, Laval University, Quebec City, QC, Canada
- P.1039 Improved human umbilical vein endothelial cells adhesion on polymer-coated magnesium
Wensen Jiang, Materials Science and Engineering, University of California, Riverside, Riverside, CA, United States
- P.1041 Optimising the surface treatment of ultra-high purity mg alloy wire
Sean Johnston, Materials, University of Queensland, Brisbane, Australia
- P.1043 In-Vitro study of organosilane coated degradable magnesium dental mesh
Avinash J Patil, Bioengineering Department, University of Pittsburgh, Pittsburgh, PA, United States
- P.1045 Multifunctional biomimetic coatings on magnesium alloys for biomedical implant applications
Jia Pei, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China

15:00 - 16:30

220bcd (P1)

Poster Session 1B**Biomaterials for therapeutic and diagnostic delivery**

- P.0002 Directed differentiation of human induced pluripotent stem cells into neuronal subtypes by small molecule releasing microspheres
Andrew M Agbay, Division of Medical Sciences, University of Victoria, Victoria, BC, Canada
- P.0004 Exploring the intracellular pathways of lysozyme protein using polyampholyte modified liposomes and freeze concentration method
Sana Ahmed, School of Materials Sciences, Japan Advanced Institute of Science and Technology, Ishikawa, Japan
- P.0006 Polyelectrolyte complexes: Self-crosslinked biomaterials
Nawar Al-Zebari, Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
- P.0008 Direct preparation of immunoliposomes with single chain Fv by cell-free membrane protein synthesis /liposome system
Mitsuru Ando, Engineering, Kyoto University, Kyoto, Japan
- P.0010 Anti-tumor effects for osteosarcoma by carbon nanotubes
Kaoru Aoki, Department of Applied Physical Therapy, Shinshu University School of Health Sciences, Matsumoto, Japan
- P.0012 Characterization of poly(simvastatin)-containing copolymers and blends
Theodora A Asafo-Adjei, Department of Biomedical Engineering, University of Kentucky, Lexington, KY, United States
- P.0014 Miltefosine incorporated hydrogel-doxorubicin conjugate as tumor responsive locoregional drug depot for combination chemotherapy
Biji Balakrishnan, Biosciences & Bioengineering, Indian Institute of Technology Bombay, Mumbai, India
- P.0016 Understanding the cell niche for tendon tissue engineering through physical scaffold cues
Brittany L Banik, Department of Bioengineering, The Pennsylvania State University, State College, PA, United States
- P.0018 Influence of chitosan properties on layer-by-layer films: an XPS depth-profiling investigation
Thiago Bezerra Taketa, School of Chemical Engineering, University of Campinas (UNICAMP), Campinas, Brazil
- P.0020 Trojan horse nanoparticles enable enhanced killing of *Brugia malayi*
Andrea M Binnebose, Veterinary Microbiology and Preventive Medicine, Iowa State University, Ames, IA, United States
- P.0022 Cell Behavior on mechanically reinforced chitosan/pectin scaffolds
Fernanda C Bombaldi De Souza, Department of Engineering of Materials and Bioprocesses, School of Chemical Engineering, University of Campinas (UNICAMP), Campinas, Brazil
- P.0024 Surface charge tunability as a powerful strategy to control electrostatic interaction for highly efficient delivery of nucleic acids, using tailored oligopeptide-modified poly(beta-amino ester)s (PBAs)
Salvador Borrós, Grup d'Enginyeria de Materials, Institut Químic de Sarrià, Universitat Ramon Llull, Barcelona, Spain
- P.0026 Novel amphiphilic hyaluronic acid derivatives as injectable hydrogels for controlled drug release
Assunta Borzacchiello, National Research Council of Italy, Istituto IPCB, Napoli, Italy
- P.0028 Gene therapy nanovehicle prospect based on graphene oxide (GO), citric acid (CA) and polyethylene glycol diamine (PEGDA).
Bexi M Bustillo, Natural Sciences and Engineering, UAM Cuajimalpa, Mexico City, Mexico
- P.0030 Platelet adhesion and clotting time on metallic surface coated by sulfonated chitosan
Clayton Campelo, Laval University, Quebec City, QC, Canada
- P.0032 Immobilization of a novel anti-thrombotic drug on a metallic vascular stent
Feng Chai, Lille 2 University of Health and Law, Lille, France
- P.0034 The pH-responsive alginate hydrogel prepared through solution extrusion and the release behavior for different drugs
Rong Chen, Sichuan University, Chengdu, P.R. China
- P.0036 modulating trastuzumab density and magnetic targeting duration of pH-sensitive magnetic nanocarriers for synergistically targeting to HER2-positive breast cancer
San-Yuan Chen, Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan
- P.0038 Manipulation of cells with electric fields via addition of carbon nanoparticles
Yi-Chang Chung, Department of Chemical and Materials Engineering, National University of Kaohsiung, Kaohsiung, Taiwan
- P.0040 Immunoactive dna-tethered nanocomplexes of antigen-cpg and iron-oxide nanoparticles as potential cancer nanovaccines
Ryan M Clauson, Pharmaceutical Sciences, University of Michigan College of Pharmacy, Ann Arbor, MI, United States
- P.0042 Synergistic combination cancer therapy based in lectin-targeted ph-responsive mesoporous silica nanoparticles
Montserrat Colilla, Departamento de Química Inorgánica y Bioinorgánica, Facultad de Farmacia, Universidad Complutense de Madrid and CIBER-BBN, Madrid, Spain
- P.0044 Evaluation of incorporating an antimicrobial agent based on n-butyl cyanoacrylate tissue adhesive
Anna Karelia Collado Coello, Centro de Biomateriales, University of Havana, Ciudad Habana, Cuba
- P.0046 On-demand growth factor delivery from hydroxyapatite-collagen scaffolds
Tyler E Curtis, Aerospace and Mechanical Engineering - Bioengineering, University of Notre Dame, Notre Dame, IN, United States
- P.0048 Integrated microfluidics and electronic monitoring for in vitro toxicology
Vincenzo F Curto, Department of Bioelectronics, Ecole Nationale Supérieure des Mines, Gardanne, France
- P.0050 Electrospun poly(dimethyl siloxane)-based meshes as a platform for T cell expansion
Alex P Dang, Biomedical Engineering, Columbia University, New York, NY, United States

- P.0052 The combined influence of shape-memory polymers substrate on the Young's modulus of living cells
Ida O Dulinska-Molak, Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland
- P.0054 Selectively mediate proliferation and migration of human vascular endothelial cells by biodegradable carrier/gene complexes
Yakai Feng, School of Chemical Engineering and Technology, Tianjin University, Tianjin, P.R. China
- P.0056 Silk fibroin membranes for controlled release of drugs: incorporation method, chemical and morphological characteristics
Giovana M Genevro, Departamento de Engenharia de Materiais e Bioprocessors (DEMBio), University of Campinas, Campinas, Brazil
- P.0058 Fully injectable hydrazone-thiosuccinimide and hydrazone-disulfide interpenetrating polymer network (IPN) hydrogels by kinetically orthogonal cross-linking of functionalized poly(N-isopropylacrylamide) (PNIPAM) and poly(1-vinyl-2-pyrrolidone) (PVP) precursors
Trevor Gilbert, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0060 Instructive model micro-fiber/hydrogel composites to guide ligament fibroblast differentiation of mesenchymal stem cells
Aaron S Goldstein, Chemical Engineering, Virginia Tech, Blacksburg, VA, United States
- P.0062 The effect of molar mass on the morphology of polysilsesquioxane based hybrid materials
Maria C Gonçalves, Institute of Chemistry, University of Campinas, Campinas, Brazil
- P.0064 Electrospun fibrous platforms as 3D in vitro model for screening chemotherapeutic drug effect in tissue regeneration and cancer therapy
Vincenzo Guarino, Institute of Polymers, Composites and Biomaterials, National Research Council of Italy, Naples, Italy
- P.0066 Decellularised extracellular matrices promote mesenchymal stem cell expansion and support osteogenic differentiation
Daniel E Heath, Chemical and Biomolecular Engineering, University of Melbourne, Parkville, Australia
- P.0068 Silica-collagen nanocomposites for local and sustained release of Interleukin 10 (IL-10) to treat cutaneous chronic wounds
Christophe Helary, LCMCP - Materials and Biology Team, University Pierre and Marie Curie, Paris, France
- P.0070 Layer-by-layer assembling of hyaluronan/chitosan nanofilms and their antibacterial effect: a study using *Staphylococcus aureus* and *Pseudomonas aeruginosa*
Jacobo Hernandez-Montelongo, Department of Applied Physics, Instituto de Física Gleb Wataghin, Campinas, Brazil
- P.0072 Synthesis and characterization of reduction-responsive block copolymer
Xiao-Shan Huang, Institute of Medical Science and Technology, National Sun Yat-Sen University, Kaohsiung, Taiwan
- P.0074 Disposable polymeric cryogels for the removal of biologically active anthrax toxin
Ganesh C Ingavle, School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, United Kingdom
- P.0076 Preparation of hydrophilic C60(OH)10/2-hydroxypropyl-beta-cyclodextrin nanoparticles for the treatment of liver injury induced by oxidative stress
Daisuke Iohara, Pharmacy, Sojo University, Kumamoto, Japan
- P.0078 Redox-sensitive biodegradable poly (ester amide)s/hyaluronic acid nanocomplex incorporated with photosensitizer for promoting intracellular delivery of anticancer drugs
Ying Ji, Department of Fiber Science and Apparel Design, Cornell University, Ithaca, NY, United States
- P.0080 Chemical characterization and mathematical modeling of Chitosan-based membranes as Electro Active Polymers
Vianney E Jimenez-Garcia, Centro de Innovacion, Desarrollo y Tecnologia, Tecnologico de Monterrey, Monterrey, Mexico
- P.0082 An on demand drug delivery depot for the treatment of inflammatory arthritis
Nitin Joshi, Biomedical Engineering, Brigham and Women's Hospital, Harvard Medical School, Cambridge, MA, United States
- P.0084 Development of chimeric navigator to capture and remove beta2-microglobulin in the blood
Yusuke Kambe, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Osaka, Japan
- P.0086 Self-assembled glucose-cored poly (aryl ether) dendron gel for efficient encapsulation and controlled release of guest molecules
Ramya Kannan, Department of Chemistry, Indian Institute of Technology Madras, Chennai, India
- P.0088 Enhanced breast cancer targeting ability of Ce6/p18-4-conjugated spherical nano hybrids for photodynamic therapy
Young-Jin Kim, Department of Biomedical Engineering, Catholic University of Daegu, Gyeongsan, Korea
- P.0090 The effect of drug loading technics on in vitro release profile from multifunctional chitosan/polyurethane composites.
Monika M Bil, Faculty of Materials Science and Engineering, Warsaw University and Technology, Warsaw, Poland
- P.0092 Incorporation of curcumin-gold nanoparticles on electrospun poly(n-vinylpyrrolidone) nanofibrous scaffolds for controlled drug release
Alfin Kurniawan, Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan
- P.0094 Sol-gel derived lithium-releasing glass for cartilage regeneration
Siwei Li, Department of Materials, Imperial College London, London, United Kingdom
- P.0096 Modular crosslinking of gelatin-based thiol-norbormene hydrogels for hepatic cell culture
Chien-Chi Lin, Biomedical Engineering, Indiana University-Purdue University, Indianapolis, IN, United States
- P.0098 Cell-instructive alginate-collagen hybrid gels for guided bone regeneration
Evi MM Lippens, Julius Wolff Institute, Charité Universitätsmedizin Berlin, Berlin, Germany
- P.0100 The addition of poly(EK) to protein drugs to enhance protein stability
Erik J Liu, Chemical Engineering, University of Washington, Seattle, WA, United States

- P.0102 Dual stimuli-responsive magnetite/lipid hybrid nanoassemblies for enhanced intracellular delivery and effective chemo/thermal therapy
Te-I Liu, National Tsing Hua University, Biomedical Engineering and Environmental Sciences, Taiwan, Hsinchu, Taiwan
- P.0104 A new method of drug delivery using degradable magnesium orthopaedic implants: a proof of concept
Jessica A Lyndon, Department of Materials Science and Engineering / Monash Institute for Pharmaceutical Sciences, Monash University, Clayton, Australia
- P.0106 Polymeric micelle as therapeutic siRNA carrier for axonal regeneration in spinal cord injury
Christian P Macks, Department of Bioengineering, Clemson University, Clemson, SC, United States
- P.0108 Forming PCL-gelatin electrospun multiaxial fibers with tunable release of therapeutic agents
Sundar Madihally, Chemical Engineering, Oklahoma State University, Stillwater, United States
- P.0110 Novel nanoparticles for ophthalmic drug delivery
Nicole A Mangiacotte, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0112 A tissue-like polymeric drug delivery implant for local cancer therapy
Aikaterini Mantzavinou, Harvard/MIT Division of Health Sciences and Technology, Massachusetts Institute of Technology, Cambridge, MA, United States
- P.0114 Photoregulated hydrazone based hydrogel formation for biochemically patterning 3D cellular microenvironments
Ian A Marozas, Chemical and Biological Engineering, University of Colorado at Boulder, Boulder, CO, United States
- P.0116 Pursuing a Novel Bioactive Dressing: Stimulation of Dermal Fibroblasts with Calcium-Phosphate Nanoparticles
Joan Martí Muñoz, Biomaterials for Regenerative Therapies, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain
- P.0118 Tunable drug delivery using chemoselective functionalization of hydrogels
Emanuele Mauri, The Chemistry, Material and Chemical Engineering Department "Giulio Natta" (CMIC), Politecnico di Milano, Milano, Italy
- P.0120 A delicate balance when substituting a small hydrophobe onto low molecular weight polyethylenimine to improve its nucleic acid delivery efficiency
Deniz Meneksedag-Erol, Biomedical Engineering, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada
- P.0122 Cell-Instructive and Stimuli-Responsive Injectable Alginate Hydrogels
Tianxin Miao, School of Engineering, University of Vermont, Burlington, VT, United States
- P.0124 Highly ordered core structure enhances drug delivery performance of polymeric micelles incorporating platinum anticancer agents
Yuki Mochida, Innovation Center of NanoMedicine, Institute of Industrial Promotion Kawasaki, Kawasaki, Japan
- P.0126 Properties of chitosan-alginate flexible membranes containing thymol and beta-carotene to treat skin lesions
Angela M Moraes, School of Chemical Engineering/Department of Engineering of Materials and of Bioprocesses, University of Campinas (UNICAMP), Campinas, Brazil
- P.0128 Effect of apatite-wollastonite glass ceramics on the migration of mesenchymal stem cells
Sylvia Muller, Institute of Cellular Medicine, Newcastle University, Newcastle, United Kingdom
- P.0130 A three-dimensional hybrid scaffold as an in vivo-imitative platform to direct migration, maturation, and differentiation of oligodendrocyte precursor cells
Lan Huong Nguyen, Nanyang Technological University, Singapore, Singapore
- P.0132 Drug release system mediated by a retro Diels-Alder reaction
Takuro Niidome, Applied Chemistry and Biochemistry, Kumamoto University, Kumamoto, Japan
- P.0134 Magnetic mechanotransduction of mesenchymal stem cells via a highly fluorescent magnetic micro patterned anti-microbial composite scaffold
Pallabi Pal, Indian Institute of Technology, Kharagpur, India
- P.0136 Preparation and studies on multifunctional mixed polyurethane drug carriers
Zhicheng Pan, Sichuan University, Chengdu, P.R. China
- P.0138 A new hybrid bioartificial shape memory hydrogel for the anastomosis of human hollow organs
Siriana Paonessa, Dipartimento di Ingegneria dell'Informazione, University of Pisa, Pisa, Italy
- P.0140 Formation and characterization of Cisplatin loaded PLGA particles via Electrohydrodynamic atomization technique
Maryam Parhizkar, Mechanical Engineering, Bio-materials and Processing Lab, University College London, London, United Kingdom
- P.0142 Hierarchical hydrogel formation through micellization of amphiphilic block polypeptide in aqueous media
Monika Patel, School of Material Science, Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan
- P.0144 Engineered brain tumor model to evaluate efficacy of candidate therapies
Sara Pedron, University of Illinois at Urbana-Champaign, Urbana, IL, United States
- P.0146 Polyanhydride nanoparticles enhance activity of amoebastatic drugs against pathogenic Naegleria fowleri
Nathan D Peroutka-Bigus, Veterinary Microbiology and Preventative Medicine, Iowa State University, Ames, IA, United States
- P.0148 Bio-inspired negatively-charged calcium phosphate nanocarriers for cardiac delivery of therapeutic molecules
Gloria Belen Ramirez Rodriguez, Institute of Science and Technology for Ceramics, Faenza, Italy
- P.0150 The use of nanosized hydroxyapatite on silk fibroin hydrogels to improve osteointegration
Marta R Ribeiro, i3S, FEUP, Instituto de Engenharia Biomédica (INEB), Porto, Portugal

- P.0152 Development of collagen-byssus protein hydrolysate matrix to improve elasticity in scaffolds for vascular tissue engineering applications
Erica Rosella, Department of Mining, Metallurgy and Material Engineering & University Hospital Research Center, Laval University, Quebec City, QC, Canada
- P.0154 Redox behavior of eumelanin derivatives for bioelectronics
Clara Santato, Polytechnique Montreal, Montreal, QC, Canada
- P.0156 Improved Dissolution of Polyphenol as an Ocular Drug
Whuisu Shim, Chemistry, Korea Advanced Institute of Science and Technology, Daejeon, Korea
- P.0158 Enhanced and selective adsorption of mercury ions on cassia grandis seed gum grafted with poly (methylmethacrylate) via free radical polymerization
Angela Singh, Department of Chemistry, University of Allahabad, Allahabad, India
- P.0160 Microparticle scaffolds support osteogenic differentiation of mscs
Karolina Stumbraitė, Biomedical Engineering, Virginia Commonwealth University, Henrico, VA, United States
- P.0162 Investigation of drug/microRNA co-delivery system for simultaneously inhibiting both common cancer cells and cancer stem cells
Yong Sun, Sichuan University, National Engineering Research Center for Biomaterials, Chengdu, P.R. China
- P.0164 Mesenchymal stem cell spheroids of different sizes for treating glioblastoma
Smruthi Suryaprakash, BME, Columbia University, New York, NY, United States
- P.0166 Preparation of hollow nanocapsules entrapping cationic sonosensitizer for effective sonodynamic therapy
Ryoma Teranishi, Department of Applied Chemistry, Graduate School of Engineering Osaka Prefecture University, Osaka, Japan
- P.0168 Small Hydrophobe Substitution on Polyethyleneimine for Effective Plasmid DNA Delivery
Bindu Thapa, Pharmacy and Pharmaceutical Science, University of Alberta, Edmonton, AB, Canada
- P.0170 Surface modification with chitosan biopolymer for the prevention of bacterial contamination devices
Juliana Vaz, Laboratory for Biomaterials and Bioengineering, ULaval, Quebec, QC, Canada
- P.0172 Hydrogel microencapsulation of polyanhydride nanoparticles for antibiotic treatment
Julia E Vela Ramirez, Biomedical Engineering, University of Texas at Austin, Austin, TX, United States
- P.0174 Design and evaluation of biofunctionalized magnetic nanoparticles for biomedical applications
Liliana Verestiuc, Faculty of Medical Bioengineering, Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania
- P.0176 Adsorption and desorption of strontium on hybrid material of hydroxyapatite and bacterial cellulose
Rodrigo Vieira, Chemical Engineering, Universidade Federal Do Ceara, Fortaleza, Brazil
- P.0178 Polysaccharide-PEI-coated superparamagnetic iron oxide nanoparticles as an efficient magneto-gene carrier
Li-Fang L Wang, Department of Medicinal and Applied Chemistry, Kaohsiung Medical University, Kaohsiung, Taiwan
- P.0180 Hollow mesoporous carbon used for oral bioavailability improvement of insoluble drug: a preliminary study both in vitro and in vivo
Siling Wang, Department of Pharmaceutics, School of Pharmacy, Shenyang Pharmaceutical University, Shenyang, P.R. China
- P.0182 Anti-tumor and repairing nerve injuries: A drug-loaded monosialogangliosides micelles delivered to brain for glioblastoma
Yazhou Wang, Bioengineering College, Chongqing University, Chongqing, P.R. China
- P.0184 Ciprofloxacin-based polymer additives interact with degradable polyurethane to alter the hydrolysis kinetics of antibiotic-releasing nanofibres
Meghan Wright, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0186 pH-sensitive surface charge-conversion nanomicelle for anti-tumor drug delivery
Wei Wu, Bioengineering College of Chongqing University, Chongqing, P.R. China
- P.0188 New insights in modulating non-viral gene transfection—endosomal escape is the key!
Hongji Yan Sr, Uppsala university, Uppsala, Sweden
- P.0190 Efficient tumor penetration of a rationally engineered nanoparticle
Yang Yang, Faculty of Pharmaceutical Sciences, The University of British Columbia, Vancouver, BC, Canada
- P.0192 Cellular environmental stimuli-responsive hyaluronan nanocapsules for delivery of anticancer drugs
Qiangying Yi, Sichuan University, Chengdu, P.R. China
- P.0194 Effect of CpG-DNA inclusion in pH-sensitive polymer-liposome vaccines on their immune-inducing activities
Yuta Yoshizaki, Applied Chemistry, Osaka Prefecture University, Sakai, Japan
- P.0196 Fabrication of gelatin- and collagen-based hydrogels for controlled drug release
Jiashing Yu, Chemical Engineering, National Taiwan University, Taipei, Taiwan
- P.0198 Smart polymeric nanocarriers functionalized with tumor-acidity-triggered surface charge transition for enhanced cellular uptake
Ting-Wei Yu, National Tsing Hua University, Hsinchu, Taiwan
- P.0200 Cell-derived vesicles modified with pH-sensitive polymers for intracellular delivery of autologous antigen
Eiji Yuba, Graduate School of Engineering, Osaka Prefecture University, Sakai, Japan
- P.0202 Preparation and characterization of folic acid conjugated paclitaxel loaded SF/PLLA-PEG-PLLA nanoparticles
Zheng Zhao, Key Lab of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, P.R. China

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Poster Session 1B

Specific applications of biomaterials

- P.0204 Chitosan-based electrospun nanofibers mats reinforced with phenytoin-loaded PLGA/Lecithin nanoparticles as potential wound dressings
Isra H Ali, Center for Material Science, Zewail City for Science and Technology, El-Shrouk, Egypt
- P.0206 Potential for enhanced wound healing with ZnO nanoparticles
Christian A Aloe, School of Medical Sciences, RMIT University, Melbourne, Australia
- P.0208 Evaluation of a rigid fibrin matrix for the survival or isolated human preantral follicles and short-term xenografting
Christiani Andrade Amorim, Gynecology, Université Catholique de Louvain, Brussels, Belgium
- P.0210 Characterization of the bone-tendon junction for tissue engineering
Oliver E Armitage, Department of Engineering, University of Cambridge, Cambridge, United Kingdom
- P.0212 Efficacy of a new porous titanium compression screw using an ovine osseointegration model
Michel Assad, Orthopedics and Biomaterials, AccelLAB Inc., Boisbriand, QC, Canada
- P.0214 Enhanced beta-cell pancreatic islet formation using laminin-functionalised dendrons tethered to poly-L-lysine
Mark G Best, School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, United Kingdom
- P.0216 Cytotoxicity analysis of hydrogels based on chitosan incorporated with variable amounts of silver nanoparticles
Katarzyna M Bialik-Wąs, Cracow University of Technology, Cracow, Poland
- P.0218 Optimization of process parameters for surface treatment for dental implants
Pankaj Chauhan, Mechanical Engineering, Indian Institute of Technology Delhi, India, New Delhi, India
- P.0220 Apatite coatings on magnesium based alloy AZ91 for improved corrosion resistance
Bolfarini Claudemiro, Materials Engineering, Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.0222 Synthesis of bioactive coatings on Ti25Nb10Zr alloy for hard tissue implants
Cosmin M Cotrut, University Politehnica of Bucharest, Bucharest, Romania
- P.0224 A novel injectable composite cement for vertebroplasty
Mehran Dadkhah, Department of Applied Science and Technology, Politecnico di Torino, Torino, Italy
- P.0226 Pluronic F127/poly(vinyl alcohol) hydrogels for controlling the photochemical nitric oxide delivery in topical applications
Marcelo G de Oliveira, Institute of Chemistry, University of Campinas, Campinas, Brazil
- P.0228 An ex-vivo model for testing of percutaneous implants
Jeppe I Dehli, Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark
- P.0230 Biodegradation of dental adhesive polymers containing ciprofloxacin derived monomers
Yasaman Delaviz, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0232 Bioengineered hyaluronan-based hydrogels for retinal cell delivery
Vianney Delplace, Chemical Engineering & Applied Chemistry, University of Toronto, Toronto, ON, Canada
- P.0234 Matrix deposition on cell-seeded polymeric entheses repair scaffolds under mechanostimulation
Mamadou B Diallo, Biomedical Engineering Department, University of Memphis, Memphis, TN, United States
- P.0236 Towards the fabrication of a 3D printed vascularized islet transplantation device for the treatment of type 1 diabetes
Stephanie A Fernandez, Department of Chemical Engineering, McGill University, Montreal, QC, Canada
- P.0238 Novel strategies for immunoprotective islet macroencapsulation
Dirk W Grijpma, Biomaterials Science and Technology, University of Twente, Enschede, Netherlands N/A
- P.0240 Electrospun poly(L-lactide-co-caprolactone) blended with fibrinogen as an artificial tendon for achilles tendon repair
Hongbing He, Pine&Power Biotech Co., Ltd, Shanghai, P.R. China
- P.0242 Properties of silicone fluids before and after purification
Can B Hu, Abbott Medical Optics, Santa Ana, CA, United States
- P.0244 pH-regulating hydrogels for wound dressing applications
Julia S Koehler, Pharmaceutical Technology, University of Regensburg, Regensburg, Germany
- P.0246 Novel cell culture technology significantly improves islet function and practical advantage of good transportation of islets
Sandeep Kumar, School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, United Kingdom
- P.0248 The role of gallic acid content in multifunctional polymer as a cytoprotective antiglaucoma drug delivery system
Jui-Yang Lai, Institute of Biochemical and Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan
- P.0250 Dermal thickening with enhanced collagen contents and epidermal thinning during maturation of dorsal-lateral pig skin.
Ming-Jen Lin, Institution of Biotechnology, National Cheng Kung University, Tainan, Taiwan
- P.0252 Characterization of an aerated fibrin sealant and its use an innovative wound therapy
Adam R Marek, Molecular Pharmacology & Therapeutics, Loyola University Chicago, Arlington Heights, IL, United States
- P.0254 Effectivity of a fluoride varnish with silver nanoparticles for enamel remineralisation in patients with trisomy 21.
America S Mares Garcia, Doctorado Institucional en Ingeniería y Ciencia de Materiales, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico

- P.0256 Does a surface coating inhibit bacterial adhesion on silicone hydrogel contact lenses
Kevin P McCabe, Research & Development, Johnson & Johnson Vision Care inc, Jacksonville, FL, United States
- P.0258 Comparative experimental study on a new drilling system for minimally invasive implantation of bone-anchored hearing aid systems
Omar Omar, Department of Biomaterials, Institute of Clinical Sciences, Sahlgrenska Academy, The University of Gothenburg, Gothenburg, Sweden
- P.0260 Advanced titanium scaffolds obtained by directional freeze-drying: on the influence of processing conditions
Juan José Pavón, Bioengineering, University of Antioquia, Medellin, Colombia
- P.0262 Dual use of 3D printed and micropatterned polycaprolactone scaffolds for in vivo guidance of oriented tissue formation in the bone-ligament complex
Sophia P Pilipchuk, Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States
- P.0264 Biphasic calcium phosphate as a bone substitute
Klaudia A Pluta, Cracow University of Technology, Cracow, Poland
- P.0266 Preparation and characterization of extracellular matrix scaffolds from porcine cholecyst, jejunum and urinary bladder
Manjula P M Puthuparambil Mony, Experimental Pathology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Poojappura, India
- P.0268 Controlled dehydration of polyvinyl alcohol as a method for seeding and preservation of alive cells
Rosa Maria M Quispe Siccha, Investigation Research, General Hospital of Mexico "Dr. Eduardo Liceaga", Distrito Federal, Mexico
- P.0270 Encapsulating hydrogels with immunomodulatory protein delivery in islet transplantation
Peter D Rios, Biomedical Engineering, Northwestern University, Chicago, IL, United States
- P.0272 Photo-triggered release of an antibiotic from an in situ forming hydrogel for antibacterial wound dressings
Yue Shi, Material Science and Engineering, Monash, Melbourne, Australia
- P.0274 Synthetic hydrogels for in vitro and in vivo artificial ovary
Ariella Shikanov, Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States
- P.0276 Fabrication of thin transparent collagen film using collagen extract from pig skin
Kyung Mi Shim, Department of Veterinary Surgery, Chonnam National University, Gwangju, Korea
- P.0278 A novel three-dimensional trilayer for studying early changes in age-related macular degeneration
Ali Shokoohmand, Faculty of Science and Engineering Faculty, Department of Biomedical Engineering and Medical Physics, Chemistry and Mechanical Engineering, Queensland University of Technology, Brisbane, Australia
- P.0280 Tendon tissue engineering using MSC-seeded decellularized human umbilical vein cultured in a mechanostimulator
Vassilios Sikavitsas, Chemical, Biological, and Materials Engineering, University of Oklahoma, Norman, OK, United States
- P.0282 In vitro cytotoxicity of silver nanoparticles as a hydroxyapatite modifier on human fibroblasts
Agnieszka L Sobczak-Kupiec, Institute of Inorganic Chemistry and Technology, Cracow University of Technology, Cracow, Poland
- P.0284 Covalent layer-by-layer renewable antioxidant coating for protecting encapsulated pancreatic islets
Cherie Stabler, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- P.0286 Formation of self-healing ferrogels modified with Au/Fe3O4 and Ag/Fe3O4 core-shell structures
Bożena Tyliszczak, Department of Chemistry and Technology of Polymers, Cracow University of Technology, Cracow, Poland
- P.0288 Bio functionalized thermo responsive Matrix for Corneal cell sheet Engineering
Balu Venugopal, Tissue Culture Laboratory, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India N/A
- P.0290 A mechanically-graded, polymer with bone- and tendon-like properties for bone-tendon repair
Yunzhi Yang, Orthopedic Surgery, Stanford University, Stanford, CA, United States

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Poster Session 1B**Biomaterials in cellular engineering**

- P.0302 The addition of the collagen binding domain of fibronectin potentiates the biochemical availability of basic fibroblast growth factor for the culture of induced pluripotent stem cells
Cyril Addi, Polytechnique Montréal, Montreal, QC, Canada
- P.0304 Cadherin-Matrix Engineering for Homogeneous Reaction Control of ES/iPS/Stem Cells
Toshihiro Akaike, Biomaterials Center for Regenerative Medical Engineering, Foundation For Advancement of International Science, Ibaraki, Japan
- P.0306 Effects of Atomic Ordering of Zirconium Oxide Nanomodification on Stem Cell Differentiation and Bacterial Adhesion
Argelia Almaguer-Flores, División de Estudios de Posgrado e Investigación, Universidad Nacional Autónoma de México, Facultad de Odontología, México, Mexico
- P.0308 Dynamic culture of mesenchymal stem cells on thermo-responsive PNIPAM substrate
George Petrov Altankov, Molecular Dynamics at Cell-Biomaterials Interface, Institute for Bioengineering of Catalonia, Barcelona, Spain
- P.0310 Networking of human mesenchymal stem cells by diamond-like carbon thin film partially deposited PDMS substrates
Masahito Ban, Nippon Institute of Technology, Saitama, Japan
- P.0312 Synthetic hydroxyapatite, silk fibroin and hyaluronic acid in bone regeneration in an experimental model
Andrea Pacheco Batista Borges, Veterinary Department, Federal University of Viçosa, Viçosa, Brazil
- P.0314 Osteogenic stem cell selection for repair and regeneration
Peter M Brett, Biomaterials and Tissue Engineering, University College London, London, United Kingdom
- P.0316 Decellularized human cardiac extracellular matrix as a natural scaffold for stem cell-based cardiac engineering
Clotilde Castaldo, Department of Public Health, div of Human Anatomy, University of Naples Federico II, Naples, Italy
- P.0318 Surface modification of biomaterials by conjugation of heparin-binding domains using plasma surface modification promotes adhesion and proliferation of adipose derived stem cells
Camilo Chaves, Orthopedics and Hand Surgery, Hôpital Saint Antoine, Paris, France N/A
- P.0320 Polyurethane foam scaffolds: a novel 3D in vitro model for breast cancer-derived bone metastasis
Nicola Contessi, Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy
- P.0322 Gene expression and canonical pathways in experimental frozen-thawed ovarian grafts treated with scaffold-base delivery of adipose tissue-derived stem cells
Luciana Lamarão Damous, Obstetrics and Gynecology, Faculdade de Medicina da Universidade de São Paulo, Sao Paulo, Brazil
- P.0324 pH-activated delivery of growth factors from keratin-PEG gels for bone tissue engineering
Roche C De Guzman, Department of Engineering, Hofstra University, Hempstead, NY, United States
- P.0326 'Abnormal' matrix stiffness effect on differentiation of stem cells on hydrogels
Jiandong Ding, Department of Macromolecular Science, Fudan University, Shanghai, P.R. China
- P.0328 On the role of heparin and integrin binding segments in cell adhesion of biomaterials
Franziska Dreher, Faculty of Biochemistry, Pharmacy and Psychology, Institute of Biochemistry, Universität Leipzig, Leipzig, Germany
- P.0330 Layer-by-layer assembly of collagen and fibronectin for tissue engineering applications
Christine Dupont-Gillain, Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, Louvain-la-Neuve, Belgium
- P.0332 Genipin crosslinked fibrin as a potential bioscaffold for delivering spinal motor neurons derived from human induced pluripotent stem cells
John M Edgar, Department of Biomedical Engineering, University of Victoria, Victoria, BC, Canada
- P.0334 Nutrient diffusion in Si-HPMC scaffolds as stem cell niche in vitro models
Lara Figueiredo, Dental School, Université de Nantes, Nantes, France
- P.0336 Cardiac derived ECM enhances cardiogenic properties of Human Cardiac Progenitor Cells
Roberto Gaetani, Bioengineering, University of California San Diego, La Jolla, CA, United States
- P.0338 Isolation and characterization of pepsin solubilized type II collagen from porcine cartilage and cartilaginous fish for intervertebral disc (IVD) regeneration
Valeria Graceffa, Regenerative, Modular & Developmental Engineering Laboratory (REMODEL), National University of Ireland Galway (NUI Galway), Galway, Ireland
- P.0340 Adipose derived stromal cells encapsulation in hydrogel particles: potential application to osteoarthritis
Jerome Guicheux, Laboratoire d'Ingénierie Ostéo-Articulaire et Dentaire, University of Nantes, Nantes, France, Metropolitan
- P.0342 3D printed scaffold architecture controls stem cell differentiation
Murat Guvendiren, New Jersey Center for Biomaterials, Rutgers University, Piscataway Township, NJ, United States
- P.0346 Evaluation of cell aggregation induced peptide for 3D culture
Yoshiaki Hirano, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan

- P.0348 Hydrogels with reversible mechanical properties for directing cell function
John Hunt, Director of U.K. Centre for Tissue Engineering and Head of Unit of Clinical Engineering, Institute of Ageing and Chronic Disease, Liverpool, United Kingdom
- P.0350 The development and characterization of a high throughput biomaterial matrix microarray to identify xeno-free and feeder layer-free culture substrates for long-term maintenance of human pluripotent stem cells
Ronald G Ireland, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0352 Functional control of stem cells encapsulated in cytocompatible and reversible MPC polymer hydrogel matrix
Kazuhiko Ishihara, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan
- P.0354 Quantitative analysis of cell responses based on dynamic properties of cell-adhesive molecules
Misaki Ito, The University of Tokyo, Tokyo, Japan
- P.0356 Development of biomimetic polycaprolactone films to promote the osteoblastic differentiation of murine stem cells
Jessica Jann, Chemical engineering, Université de Sherbrooke, Sherbrooke, QC, Canada
- P.0358 Nanofibrous substrate for in vitro expansion of mesenchymal stem cells
Dhwani Jhala, School of Life Sciences, Central University of Gujarat, Gandhinagar, India
- P.0360 Advancement of clickECM derived from human differentiated stem cells for the use as tissue-specific surface coatings
Silke Keller, Cell and Tissue Engineering, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Stuttgart, Germany
- P.0362 Effect of glucose levels on high versus low molecular weight hyaluronan and transfection of bone marrow derived human Mesenchymal Stromal Cells
Saad Khan, Ottawa Hospital Research Institute, Ottawa, ON, Canada
- P.0364 Photothermal effect of gold nanorod (GNR) for glioblastoma treatment in 3D tumorenvironment-mimicked hydrogel platform
Hyo Min Kim, Bio and Brain Engineering Department, Korea Advanced Institute of Science and Technology, Daejeon, Korea
- P.0366 Microfiber scaffold combined with cell-derived matrices for chondrogenic mesenchymal condensation
In Gul Kim, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea
- P.0368 Fluid shear stress enhanced the infiltration of human mesenchymal stem cell into the electrospun poly(lactic-co-glycolic acid) scaffold
Min Song Kim, Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea
- P.0370 Biomolecular interactions of defined sulfated oligohyaluronan probes: Toward a rational optimization of GAG-based biomaterials
Sebastian Köhling, Institut Für Pharmazie / AG Rademann, Freie Universität Berlin, Berlin, Germany
- P.0372 The mechanics of liquid-liquid interfaces controls cell spreading and stem cell expansion
Dexu Kong, Queen Mary University of London, London, United Kingdom
- P.0374 Human stem cell culture and detachment on biomaterials immobilized with thermoresponsive nanobrush
Yi Tung Lu, Chemical and Materials Engineering, National Central University, Taoyuan, Taiwan
- P.0376 Proliferation and osteogenic differentiation of amniotic fluid derived stem cells cultured on biomaterials having nano segments and optimal elasticity
Saradaprasan Muduli, Chemical and Materials Engineering, National Central University, Jhongli City, Taiwan
- P.0378 Modulating stem cell-substrate interactions and differentiation by controlling substrate topography via microphase separation
Sanjeeva Murthy, New Jersey Center for Biomaterials, Rutgers University, New Jersey, United States
- P.0380 Human mesenchymal stem cells recognize extracellular collagen as a sequence specific peptide or as amino acid substrates?
Ratchapong Netsrithong, Faculty of Science, Silpakorn University, Nakhon Pathom, Thailand
- P.0382 Scaffold for the regeneration of cartilage tissue.
Roberto Olayo, Física, Universidad Autónoma Metropolitana-Iztapalapa, Mexico, Mexico
- P.0384 Long-term culture and spontaneous recordings of primary neurons on conducting polymer microelectrode arrays
Jolien Pas, Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, Gardanne Cedex, France
- P.0386 Osteogenic differentiation modulated by cross-linking of tissue engineering scaffolds
Kendell M Pawelec, FUJIFILM Europe BV, Tilburg, Netherlands
- P.0388 A biofunctional microcavity platform to dissect autocrine and paracrine signals and to control fate decisions of hematopoietic stem and progenitor cells
Tilo Pompe, Institute of Biochemistry, Universität Leipzig, Leipzig, Germany
- P.0390 Activation of Wnt/beta-catenin pathway during osteogenic differentiation of adipose derived stem cells in monolayer cultures and 3D spheroids
Slawomir Ruminski, Department of Histology and Embryology, Centre for Preclinical Research and Technology, Medical University of Warsaw, Warsaw, Poland
- P.0392 Microgel structure of amphiphilic polyurethanes controls cellular organization
Debanjan Sarkar, Biomedical Engineering, University at Buffalo, The State University of New York, Buffalo, NY, United States
- P.0394 Glycosaminoglycan - biohybrid hydrogels for the immune modulation in wound healing
Lucas Schirmer, Max Bergmann Center of Biomaterials, Leibniz-Institut für Polymerforschung Dresden, Dresden, Germany
- P.0396 Effect of Young's modulus on neural differentiation of human induced pluripotent stem cell derived neural stem cells.
Laura Smith Callahan, Neurosurgery and Center for Stem Cells and Regenerative Medicine, University of Texas Health Science Center, Houston, TX, United States

- P.0398 On-demand dissolution of 3d synthetic extracellular matrix for systems biology assays
Jorge Valdez, Massachusetts Institute of Technology, Cambridge, MA, United States
- P.0400 Smooth muscle cell responses to poly(3-hydroxybutyrate) spherulites
Shanfeng Wang, Department of Materials Science and Engineering, and Institute of Biomedical Engineering, The University of Tennessee, Knoxville, TN, United States
- P.0402 Preparation of MMP-sensitive Hyaluronic Acid Hydrogels and their impact on cell migration
Shan Yu, MOE Key Laboratory of Macromolecular, Synthesis and Functionalization, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.0404 The effect of MAA polymer-stimulated macrophages on endothelial cells
David Kongyu Zhang, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0406 A microfluidic-based platform for high-throughput screening of stem cell-niche interactions in 3D gradient hydrogels
Danqing Zhu, Bioengineering, Stanford University, Stanford, CA, United States
- P.0408 Coordinated regulation of mirnas to induce chondrogenesis and inhibit angiogenesis in stem cells and ECM materials under hypoxic environment
Xuenong Zou, Orthopaedic Surgery, The first affiliated hospital of Sun Yat-sen University, Guangzhou, P.R. China

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Poster Session 1B

Building blocks

- P.0410 Increase in VEGF secretion induced by particles of porous silica glasses containing CuO and SrO
Aldo Boccaccini, Institute of Biomaterials, University of Erlangen-Nuremberg, Erlangen, Germany
- P.0412 Il-4 functionalized 2D and 3D structures based on supramolecular interactions for in-situ vascular regeneration
Valentina Bonito, Soft Tissue Biomechanics and Tissue Engineering, Biomedical Engineering, Technical University of Eindhoven (TU/e), Eindhoven, Netherlands
- P.0414 Abalone water-soluble matrix for self-healing biomineralization of tooth defects
Jingdi Chen, Institute of Biomedical and Pharmaceutical Technology, Fuzhou University, Fuzhou, P.R. China
- P.0416 Design of self-assembling nanotubes from biopolymers
Kevin M Conley, McGill University, Montreal, QC, Canada
- P.0418 Preparation and evaluation of keratin scaffold derived from wool and human hair for cell culture and tissue engineering
Hiroki Goto, Department of Biomedical Engineering, Osaka Institute of Technology, Osaka, Japan
- P.0420 Functionalization of silk fibroin through anionic fibroin derived polypeptides
Gabriele Griffanti, Materials and Mining Engineering, McGill University, Montreal, QC, Canada

- P.0422 Supramolecular self-assembly of n-acetyl beta3-peptide amphiphiles
Nathan N Habila, Biochemistry and Molecular Biology, Monash University, Melbourne, Australia
- P.0424 Periodically sequenced peptides: a new tool for nanoscale materials synthesis
Matthew B Kubilius, Chemical Engineering, City College of New York, New York, NY, United States
- P.0426 Hyaluronic acid hydrogels cross-linked by polyethylene glycol diglycidyl ether (PEGDE) for long-lasting dermal filler applications
Ho-Yong Lee, Seoul National University, Seoul, Korea
- P.0428 Docetaxel binding peptide enhances drug loading in polymeric nanomicelles
Jennifer Logie, Chemical Engineering, University of Toronto, Toronto, ON, Canada
- P.0430 Rational design of target biomolecule-responsive hydrogels using biomolecular complex crosslinks
Takashi Miyata, Department of Chemistry and Materials Engineering, Kansai University, Suita, Osaka, Japan
- P.0432 Deacetylation of chitosan optimization in production
Raid Icaro Rached Farias, Materials Engineering, Federal University of Campina Grande, Campina Grande-PB, Brazil
- P.0434 Mesoscopically ordered bone mimetic nanocomposites
Anand K Rajasekharan, Applied Chemistry, Chalmers University of Technology, Gothenburg, Sweden
- P.0436 Characterisation of collagen-fibrinogen scaffolds - methods from biology
Jennifer H Shepherd, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
- P.0438 Harnessing host-guest interactions of collagen and synthetic chaperones to build ultra-structured composite membranes
Sven D Sommerfeld, Ophthalmology, Johns Hopkins Medicine, Baltimore, MD, United States
- P.0440 GTP-responsive tubulin vesicle with a photoreactive molecular glue for DDS carrier
Noriyuki Uchida, Center for Emergent Matter Science, RIKEN, Saitama, Japan
- P.0442 Fabrication of collagen scaffolds using collagen isolated from *Aplysia californica*
Victoria A Webster, Case Western Reserve University, Cleveland, OH, United States
- P.0444 Modular design of triple α -helical fibrillar peptides as an epitope delivery platform
Yaoying Wu, Surgery, University of Chicago, Chicago, IL, United States
- P.0446 Smart nano-sized composite micelle system for tumor targeting delivery
Lin Xiao, College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan, P.R. China
- P.0448 Mesoporous silica nanospheres with multifunctional properties for bone regeneration
Yinghong Zhou, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

15:00 - 16:30

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Poster Session 1B**Functional materials**

- P.0450 Antimicrobial GL13K-peptide coatings
Conrado Aparicio, Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, MN, United States
- P.0452 Effect of incorporation of Cu and Zn-doped bioactive glasses on the in vitro apatite formation and antibacterial capacity of PDLLA composite foams
Julian Bejarano Narvaez, Departamento de Farmacología y Toxicología, Universidad de Chile, Santiago, Chile
- P.0454 Development and evaluation of a wound dressing with a dual antibacterial / anti-inflammatory activity.
Nicolas Blanchemain, INSERM U1008, University of Lille, Lille, France
- P.0456 Magnetic hyperthermia therapy enhance the biofilms eradication of prosthetic joint infection
Chia-Ni Chang, Biomedical Technology and Device Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan
- P.0458 Cell sheets prepared via gel-sol transition of calcium rgd-alginate
Fei Chen, Department of Chemical Engineering, Queen's University, Kingston, ON, Canada
- P.0460 Development and study of surgical braided silk suture with sustained antibacterial property
Xiaojie Chen, biomedical textiles and technology, Donghua University, Shanghai, P.R. China
- P.0462 Protease sensing PEG hydrogels
Martin Ehrbar, Obstetrics, University of Zurich, Zurich, Switzerland
- P.0464 A TiO₂ - polyurethane composite as an alternative ventricular catheter material
Davide Erbogasto, Biomedical Engineering, University of Strathclyde, Glasgow, United Kingdom
- P.0466 An 'artificial nose' for the non-invasive diagnosis of anxiety in Alveolar Breath
Jessica E Fitzgerald, Bioengineering, Northeastern University, Jamaica Plain, MA, United States
- P.0468 Adsorption of plasma proteins on multi layer surface modified polyurethane films
Nesrin Hasirci, Chemistry Department, Middle East Technical University, Ankara, Turkey
- P.0470 Design and synthesis of antibacterial waterborne polyurethanes
Wei He, College of polymer Science and Engineering, Sichuan University, Chengdu, P.R. China
- P.0472 Engineered porous scaffold for periprosthetic infection prevention
Giorgio Iviglia, Research & Development, Department of Applied Science and Technology (DISAT), Nobil bio ricerche - Politecnico di Torino, Torino, Italy
- P.0474 Rapid in vitro tissue deadhesion system using thermoresponsive polysaccharide derivative.
Asuka Kato, Business Development Research Laboratory, Toppan printing Co. Ltd., Saitama, Japan
- P.0476 Preparation of ion group functionalized thermogelling diblock copolymers
Bo Keun Lee, Ajou University, Regenerative medicine Lab, Suwon, Korea
- P.0478 Antibacterial calcium phosphate/polyurethane composite scaffolds for bone regeneration
Jidong Li, Research Center for Nano-Biomaterials, Analytical & Testing Center, Sichuan University, Chengdu, P.R. China
- P.0480 Hyaluronic acid microgel assemblies using host-guest chemistry
Joshua E Mealy, Department of Biongeering, University of Pennsylvania, Philadelphia, PA, United States
- P.0482 Micron-thin bactericidal sol-gel coated intramedullary nails for the prevention and treatment of infection
Haibo Qu, Depuy Synthes, Warsaw, IN, United States
- P.0484 The exploitation of urease-producing bacteria in catheter-associated urinary tract infections using an infection-responsive biomaterial
Johann L Trotter, School of Pharmacy, Belfast, United Kingdom
- P.0486 Biomedical devices with slippery liquid-infused porous surfaces with high resistance to bacterial infection
Matthew P Wylie, School of Pharmacy, Queen's University Belfast, Belfast, United Kingdom
- P.0488 Bioinspired double-positively charged phosphodicholine-chitosan with excellent biocompatibility for antibacterial applications
Rong Zeng, Department of Material Science and Engineering, Jinan University, Guangzhou, P.R. China

15:00 - 16:30

220bcd (P3)

Poster Session 1B**Tissue engineering and regenerative medicine**

- P.0520 Release and bioactivity of growth factors encapsulated in emulsion electrospun tissue engineering scaffolds
Yu Zhou, The University of Hong Kong, Hong Kong, Hong Kong N/A
- P.0522 Synthesis and characterization of mineralized films from xanthan and chitosan hydrogels by layer-by-layer and dip-coating methods
Aline Evangelista Aguiar, Physical-chemistry, Chemistry Institute/Unicamp, Campinas/SP, Brazil
- P.0524 In vitro investigation of a new biomaterial coating for titanium implants incorporating rhBMP-7
Ashraf Farouk Ayoub, Clinical Dentistry, University of Glasgow, Glasgow, United Kingdom
- P.0526 Injectable pH-responsive supramolecular hydrogels for sustained drug delivery
Maarten Bakker, Eindhoven University of Technology, Eindhoven, Netherlands
- P.0528 Engineering the masquetelet technique
Jake Barralet, McGill University, Montreal, Canada
- P.0530 Promoting chondroinduction with naturally derived hydrogel pastes
Emily C Beck, Surgery, University of Kansas, Lawrence, KS, United States
- P.0532 Challenges in improving cell density of tissue-engineered corneal endothelium
Jean-Michel Bourget, Departement of Ophtalmology, University of Montreal, Hopital Maisonneuve Rosemont, Montreal, QC, Canada
- P.0534 Evaluation of mesenchymal stem cell adhesion to woven polymer meshes
Karen Burg, Small Animal Medicine & Surgery, University of Georgia, Athens, GA, United States
- P.0536 3-D Cell encapsulation in gelatin and elastin poly (ethylene glycol) hybrid hydrogel for elastic tissue remodeling
Ye Cao, Nanyang Technological University, Singapore, Singapore
- P.0538 The study of the prevention dressing of keloid
Shwu Jen Chang, Department of Biomedical Engineering, I-Shou University, Kaohsiung City, Taiwan
- P.0540 Addressing the challenge in osteoporotic fracture fixation through strontium-releasing surface
Xiaobo Chen, Materials Science and Engineering, Monash University, Clayton, Australia
- P.0542 Development of epigallocatechin-gallate(EGCG) loaded collagen membrane to guide tissue regeneration
Chen Yu Chu, State Key Laboratory of Oral Disease, West China Hospital of Stomatology Sichuan University, Chengdu, P.R. China
- P.0544 Development of a novel marine-derived tri-composite biomaterial for bone regeneration
Susan A Clarke, School of Nursing and Midwifery, Queen's University Belfast, Belfast, United Kingdom
- P.0546 Biomimetic multidirectional scaffolds for osteochondral repair by sequential freeze casting
Drew S Clearfield, Department of Materials Science and Engineering, University of Connecticut, Mansfield, CT, United States
- P.0548 Collagen density gradient on poly(epsilon-caprolactone) surface for the design of 3D printed osteochondral
Ugo D'amora, National Research Council of Italy, Institute of Polymers, Composites and Biomaterials, Naples, Italy
- P.0550 SDF-1 and CCL5 delivered from thermoresponsive hyaluronan hydrogel induce cell homing in an osteochondral defect repair model in rabbit
Matteo Deste, Musculoskeletal Regeneration Program, AO Research Institute Davos, Davos Platz, Switzerland
- P.0552 Hydrogel and bacterial cellulose mats behavior with calcium phosphate deposition.
Paula Braga Daltró, Instituto de Química - IQ - Unesp - Araraquara, Araraquara, Brazil
- P.0554 Highly oriented in situ gelling nanocomposite hydrogels as tissue engineering scaffolds for promoting directional cell growth
Kevin J De France, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.0556 Enzymatic, urease-mediated mineralization of gellan gum hydrogel with calcium carbonate, magnesium-enriched calcium carbonate and magnesium carbonate for bone regeneration applications
Timothy Douglas, Dept. Molecular Biotechnology, Faculty of Bioscience Engineering, Ghent University, Gent, Belgium
- P.0558 Development of bone substitute: poly(epsilon-caprolactone) scaffold functionalized by adhesive peptides in combination with soluble BMP-9
Olivier Drevelle, Polytechnique Montréal, Université de Sherbrooke, Montréal, QC, Canada
- P.0560 Citric acid-crosslinked elastine-like hydrogels for in situ bone regeneration
Elisabeth Engel, Biomaterials for Regenerative Therapies, Institute for Bioengineering of Catalonia, Barcelona, Spain N/A
- P.0562 Peptides with specific binding affinity to acid-alkali treated titanium
Bo Feng, School of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.0564 Piezoelectric nanoscaffolds: mediating tendon regeneration through activation of piezoresponsive receptors.
Marc A. Fernandez-Yague, Biomedical Engineering, Centre for Research in Medical Devices (CURAM), Galway, Ireland
- P.0566 Fabrication and characterization of zirconium cross-linked carboxymethyl cellulose-chitosan microparticles for bone tissue engineering application
Bipin Gaihre, Department of Bioengineering, The University of Toledo, Toledo, OH, United States
- P.0568 Chitosan nanogels for biomedical applications: Choosing a suitable sterilization method
Raquel SC Galante, Pharmacy, Faculdade de Ciências Farmacêuticas, São Paulo, Brazil

- P.0570 Cell-free fibrin scaffolds for in situ regeneration of full thickness cartilage defects
Changyou Gao, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.0572 Fine-tunable micro-patterns in Chitosan-based scaffolds: fabrication process and material properties
Arash Ghalayani-fahani, Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy
- P.0574 Synthetic polymers which reproduce antifreeze (glyco)protein function; Control of Ice Growth and Cryopreservation of Donor Cells
Matthew I Gibson, Chemistry, University of Warwick, Coventry, United Kingdom
- P.0576 Potential Therapeutic Applications of Anti-inflammatory Porous PLGA/Mg(OH)₂ scaffolds for kidney regeneration
Dong Keun Han, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea
- P.0578 Functionalized recombinant spider silk as support for muscle engineering
My Hedhammar, Protein Technology, Royal Institute of Technology, Stockholm, Sweden
- P.0580 Decellularized pig corneal stroma seeded with limbal cells
Miguel A Herrera Enriquez, Cell and Tissue Biology, Medicine School, Universidad Nacional Autónoma de México, México, Mexico
- P.0582 Nanofibrous microspheres prepared from bacterial cellulose nano-whiskers as potential cell microcarriers
Lixia Huang, Department of Biomedical Engineering, Huazhong University of Science and Technology, Wuhan, P.R. China
- P.0584 Development of a three-dimensional cell culture tissue that mimics female genital mucosae as an infection model
Weronika Jakubowska, Tissue Engineering and Regenerative Medicine, Laboratoire d'Organogénèse Expérimentale, Québec, QC, Canada
- P.0586 Effect of charge content and chemistry on long-term, 3-D hepatocyte spheroid culture
Amol V Janorkar, Biomedical Materials Science, University of Mississippi Medical Center, Jackson, MS, United States
- P.0588 AFM observation of Si-HPMC hydrogel cross-linking
Fabienne Jordana, Laboratoire d'Ingénierie Ostéo-Articulaire et Dentaire, Institut National de la Santé et de la Recherche Médicale, Nantes, France
- P.0590 Cell delivery system using injectable polymeric films
Hirokazu Kaji, Bioengineering and Robotics, Tohoku University, Sendai, Japan
- P.0592 Engineering biphasic janus-type polymer-protein nanofibers via centrifugal jet spinning
Alex C Khang, Biomedical Engineering, University of Arkansas, Fayetteville, AR, United States
- P.0594 Green electrospinning of gelatin and pullulan nanofibers to mimic the extracellular matrix
Martin W King, College of Textiles, North Carolina State University, Raleigh, NC, United States
- P.0596 Effects of dopamine and a dopamine analog on polydopamine-laced hydroxyapatite gelatin nanocomposites
Ching-Chang Ko, Orthodontics, University of North Carolina, Chapel Hill, NC, United States
- P.0598 Functional modification of fibrous PCL scaffolds with fusion protein HGF1-VEGF enhanced cellularization and vascularization
Deling Kong, College of Life Sciences, Nankai University, Tianjin, P.R. China
- P.0600 Polydopa coated PDMS microspheres for enhanced vocal fold augmentation of paralyzed larynx
Seong Keun Kwon, Otorhinolaryngology-Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea
- P.0602 Human ECM particles produced in vitro are injectable and support angiogenesis and adipogenesis in vivo
Nicolas L'heureux, Laboratoire de Bioingénierie Tissulaire, Unité 1026, Institut National de la Santé et de la Recherche Médicale (INSERM), Bordeaux, France
- P.0604 Osteoclasts culture in compartmentalized microfluidic platforms and bone-like mineralized substrates
Meriem Lamghari, Instituto de Engenharia Biomédica (INEB/i3S), Porto, Portugal
- P.0606 Immobilization of gelatin onto acrylic acid grafted bacterial cellulose for regulating cell behaviors using gamma-irradiation
Youn-Mook Lim, Research Division for Industry & Environment, Advanced Radiation Tech. Inst., Korea Atomic Energy Research Institute (KAERI), Jeongseup-si, Korea
- P.0608 Understanding the role of polymer surface nanoscale topography on inhibiting bacteria adhesion and growth
Luting Liu, Chemical Engineering, Northeastern University, Boston, MA, United States
- P.0610 Material and scaffold design and development for intervertebral disc tissue engineering and regeneration
Yang Liu, Centre of Biological Engineering, Wolfson School of Mechanical and Manufacturing Engineering, Loughborough University, Loughborough, United Kingdom
- P.0612 Functionalized poly(glycerol sebacate)/poly(butylene succinate-dilinoleate) electrospun scaffolds for cardiac tissue engineering
Liliana Liverani, Institute of Biomaterials, Department for Materials Science and Engineering, University Erlangen-Nuremberg, Erlangen, Germany
- P.0614 Internal crosslinking evaluation of gelatin electrospinning fibers with 1,4 - butanediol Diglycidyl ether (Bddge) for skin regeneration
Bianca N Lourenço, Biomaterials for Multistage Drug & Cell Delivery, Instituto de Engenharia Biomédica (i3S/ INEB), Porto, Portugal
- P.0616 Cellularized collagen gels for tissue engineered vascular wall: in vitro models alternative to in vivo testing
Caroline Loy, Dept. Min-Met-Materials Engineering & CHU de Québec, Research Center, Lab. for Biomaterials & Bioengineering (CRC-I), Québec, QC, Canada

- P.0618 Study of in situ forming sulfobutyl ether β -cyclodextrin/self-assembling peptide hydrogel and its release profile of dexamethasone in vitro
Lei Lu, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada
- P.0620 Driving iPSC-derived progenitor fate using in vitro synthesized kidney extracellular matrices assembled under macromolecular crowding
Valentina Magno, Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research, Dresden, Germany
- P.0622 A new hydrogel microfiber for cell and growth factor delivery designed bone tissue engineering
Mathieu Maisani, LBB CHUQ & BioTis INSERM, Laval University & University of Bordeaux, Quebec, QC, Canada
- P.0624 Biomimetic dicalcium phosphate cements prepared with bovine bone ash
Alaa Mansour, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- P.0626 The composition of decellularized extracellular matrix influences the biological activity of polymeric scaffolds
Yong Mao, New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, United States
- P.0628 Hydroxyapatite scaffolds surface modified with Pluronic for delivery of antiosteoporotic drugs
Rodrigo Fernando Costa Marques, Department of Physical-Chemistry, Institute of Chemistry, Sao Paulo State University (UNESP), Araraquara, Brazil
- P.0630 Soft bionanocomposites based on poly-L-lysine and nanosilicate for tissue engineering applications
Kazuaki Matsumura, School of Materials Science, Japan Advanced Institute of Science and Technology, Ishikawa, Japan
- P.0632 Encapsulation of proteins in micro- and nano-hydrogel carrier systems for controlled drug delivery
Henning Menzel, Institute for Technical Chemistry, Braunschweig University of Technology, Braunschweig, Germany
- P.0634 Constructing human skin equivalents on porcine acellular peritoneum extracellular matrix for in vitro irritation testing
Bozena B Michniak-Kohn, Pharmacy/Pharmaceutics, Rutgers-The State University of New Jersey, Piscataway, NJ, United States
- P.0636 Drug infused clay nanotubes for combinatorial drug delivery
David K Mills, Biological Sciences/Biomedical Engineering, Louisiana Tech University, Ruston, LA, United States
- P.0638 Fabrication and optimization of 2D alginate membranes for regenerative medicine and tissue engineering application
Anurup Mukhopadhyay, School of Medical Science and Technology, Indian Institution of Technology, Kharagpur, India
- P.0640 Simvastatin release from poly(lactic-co-glycolic acid) scaffolds incorporating poly(β -amino ester) microspheres
Amir H Najarzadeh, Biomedical Engineering Department, University of Kentucky, Lexington, KY, United States
- P.0642 Analysis of tissue response around injectable hydrogels in the subcutaneous tissue of Wistar rats
Newton Maciel Oliveira, Morphology and Pathology, Faculty of Medical Sciences and Health, Pontifical Catholic University of São Paulo, Sorocaba, Brazil
- P.0644 Injectable self-gelling composites for bone tissue engineering based on gellan gum hydrogel enriched with different bioactive glasses
Elżbieta Pamuła, Department of Biomaterials, AGH University of Science and Technology, Kraków, Poland
- P.0646 Development and in vitro evaluation of bioinspired, chitosan based, 3D hybrid nanohydroxyapatite scaffolds.
Triantafillos Papadopoulos, Biomaterials, School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece
- P.0648 Development of a biomimetic nanocomposite gradient scaffold to mimic the natural osteochondral structure for tissue repair
Cristian Parisi, Tissue Engineering and Biophotonics, King's College London, London, United Kingdom
- P.0650 Antioxidant potential of the fruit from Lycium barbarum
Nivaldo A Parizotto, Biotechnology Post Graduation Program, University of Araraquara (UNIARA), São Carlos, Brazil
- P.0652 Cpne7 is a signaling molecule from preameloblasts and regulates the differentiation of mesenchymal cells into odontoblasts
Joo-Cheol Park, Department of Oral Histology-Developmental Biology, School of Dentistry, Seoul National University, Seoul, Korea
- P.0654 Biocompatible graphene/nanofiber composite promotes myoblast differentiation
Akhil Patel, Department of Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, PA, United States
- P.0656 Use of a hyaluronan and methylcellulose hydrogel to deliver neural stem cells to the stroke-injured brain
Samantha L Payne, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- P.0658 A pilot study to compare the activity of different bone morphogenetic protein bioimplants in vivo
Sean AF Peel, Induce Biologics Inc., Toronto, ON, Canada
- P.0660 3D bioengineered scaffold-based model to investigate the role of the tumour microenvironment in localised prostate cancer progression
Brooke A Pereira, Anatomy and Developmental Biology, Monash University, Clayton, Australia
- P.0662 Accelerated wound healing by novel polymeric composite dressings
Soledad Perez-Amodio, Biomaterials for Regenerative Therapies, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain
- P.0664 Remarkable rheological properties of short alkyl chain derivatives of hyaluronic acid
Dalila Petta, AO Research Institute Davos, Davos Platz, Switzerland
- P.0666 the effect of biomimetic aggrecan on human chondrocytes
Evan R Phillips, Materials Science, Drexel University, Philadelphia, PA, United States
- P.0668 Formation of hybrid materials based on calcium phosphate deposit on carbon fiber scaffold
Quentin Picard, ICMN, CNRS, University of Orleans, Orleans, France

- P.0670 Stimuli-responsive polymers for rapid and reversible cell spheroid formation
Adérito J Rodrigues Amaral, UCL School of Pharmacy, University College London, London, United Kingdom
- P.0672 Effect of strontium substitution on the morphology of calcium phosphates crystals and polymorphism of the hydroxyapatite hexagonal (P63/m) / monoclinic (P21/c)
Jose da Silva Rabelo Neto, Condensed Matter Physics, Materials Engineering, Joinville, Brazil
- P.0674 Microdialysis in critical size bone defects - quantitative assessment of cytokines and proteins in the early stage of fracture repair
Stefan Rammelt, University Center of Orthopaedics and Traumatology, University Hospital Carl Gustav Carus, Dresden, Germany
- P.0676 A novel bottle-brush polyelectrolyte based on hyaluronan and its application in bionic lubrication
Li Ren, National Engineering Research Center for Tissue Restoration and Reconstruction, School of Materials Science and Engineering, South China University of Technology, Guangzhou, P.R. China
- P.0678 Comparative evaluation of cholesteryl derived scaffold for wound healing application
Deepa Revi, Medical Laboratory Technology, KVM institute of Paramedical Sciences, Cherthala, Kochi, India
- P.0680 Combinatory approach for developing silk fibroin-based scaffolds with hierarchical porosity and enhanced performance for cartilage tissue engineering applications
Viviana P Ribeiro, Department of Polymer Engineering, 3B's Research Group, Guimarães, Portugal
- P.0682 Producing and characterizing PCL/PA6 three dimensional nanofibrous scaffolds for tendons and ligaments regeneration
Chiara Rinoldi, Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland
- P.0684 Bone quality assessment through the crystalline structure of hydroxyapatite
João M A Rollo, Materials Engineering Department, Escola de Engenharia de São Carlos, Universidade de São Paulo, Processo FAPESP, São Carlos, Brazil
- P.0686 Stability and release of two peptides in a novel peptide-based drugs for local intra-articular purpose in osteoarthritis.
V Gaëlle Roullin, Faculté de pharmacie, Université de Montréal, Montreal, QC, Canada
- P.0688 Designing Injectable Peptide-Based Hydrogels for Regenerative Applications
A Saiani, School of Materials, University of Manchester, Manchester, United Kingdom
- P.0690 A modified chitosan film by coating with reconstruction of decellularized pulp/collagen for wound healing.
Supaporn Sangkert, Biomedical Engineering, Faculty Medicine, Prince of Songkla University, Songkhla, Thailand
- P.0692 Biocompatibility of Hydroxyapatite/Collagen Paste with 3-glycidoxypolytrimethoxysilane
Taira Sato, Department Applied Chemistry, School of Science and Technology, Meiji University, Kawasaki, Japan
- P.0694 Adipose stem cell supported bone formation may be due factors in addition to VEGF and BMP2
Zvi Schwartz, School of Engineering, Virginia Commonwealth University, Richmond, VA, United States
- P.0696 Characterization of cellulose nanowhiskers by dynamic light scattering and atomic force microscopy
Reza Shahbazian-Yassar, Mechanical Engineering, University of Illinois at Chicago, Chicago, IL, United States
- P.0698 Injectable gel from squid pen chitosan for bone-tissue engineering applications
Amin Shavandi, Food Science, University of Otago, Dunedin, New Zealand
- P.0700 Fast degradation PLLA/apatites composites with high content of mineral phase for bone regeneration.
Diego Souza, Fundamental Chemistry Department, Chemistry Institute, University of São Paulo (USP), São Paulo, Brazil
- P.0702 The adjuvant effect of plga is mediated via dendritic cells in vivo
Sangeetha Srinivasan, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- P.0704 Injectable, elastic silk-ECM hydrogels for cardiac repair
Whitney L Stoppel, Biomedical Engineering, Tufts University, Medford, MA, United States
- P.0706 Fabrication of electrospun tilapia collagen nanofibers and effect of promoting wound healing in vitro and in vivo
Jiao Sun, Shanghai Biomaterials Research & Testing Center, Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, P.R. China
- P.0708 Stem cell infiltrated biomimetic inverse trabecular-patterned scaffolds accelerate bone growth during long segment repair in a sheep critical sized defect
John A Szivek, Orthopaedic Surgery, University of Arizona, Tucson, AZ, United States
- P.0710 Design of biocompatible polymers: The roles of bio-interfacial water and "intermediate water" concept
Masaru Tanaka, Chemistry, Institute of Chemistry, Fukuoka, Japan
- P.0712 Study of the impact of glycation in wound healing using a tissue-engineered skin
Kiefer Thouin, Department of Surgery, Laval University, Quebec, QC, Canada
- P.0714 Bone augmentation by gene activated matrix composed of plasmid DNA, BMP4 or RUNX2, embedded in atelocollagen
Mayumi Umebayashi, Oral Surgery, Nagasaki University, Nagasaki, Japan
- P.0716 Tailoring of mesenchymal stem cell behavior on plasma-modified polytetrafluoroethylene
Huaiyu Wang, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
- P.0718 Hierarchically aligned fibrillar fibrin hydrogel designed for spinal cord injury repair
Xiumei Wang, School of Materials Science and Engineering, Tsinghua University, Beijing, P.R. China

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- P.0720 Molecularly regulated release of growth factors from programmable hydrogels for angiogenesis
Yong Wang, Biomedical Engineering, Penn State University, State College, PA, United States
- P.0722 Modified electro-spun PU fibers with reconstructed collagen assembly as cardio patch scaffold for ischemic disease; preparation, physical properties and morphological structure
Nattawat Watcharajittanon, Biomedical Engineering, Faculty of Medicine, Prince of Songkla University, Songkhla, Thailand
- P.0724 Highly porous transcutaneous implants of varying material and pore geometry promote healing and in-growth of skin after surgical implantation into rabbits
James A Weber, School of Food and Agriculture, University of Maine, Orono, ME, United States
- P.0726 Developing cryogel microcarriers for neural cell growth and transplantation
Carsten Werner, Max Bergmann Center of Biomaterials, Leibniz Institute o Polymer Research Dresden and TU Dresden, Dresden, Germany
- P.0728 Controllable micro/nano biofabrication of fascinating composites based on bacterial cellulose
Guang Yang, College of Science & Technology, Huazhong University of Science & Technology, Wuhan, P.R. China
- P.0730 Application of chitin-based biomaterials to regulate the basement membrane dynamics for engineering epithelial structure formation
Tsung-Lin Yang, National Taiwan University, Taipei, Taiwan
- P.0732 Enhancing osteochondral defect repair ability of hyaluronic acid/collagen hydrogel by icariin chemical conjugation
Tun Yuan, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- P.0734 Biophysical, biochemical and biological properties of nanotextured collagen fibres
Dimitrios I Zeugolis, Centre for Research in Medical Devices (CÚRAM), National University of Ireland Galway (NUI Galway), Galway, Ireland
- P.0736 Promotion of extracellular matrix deposition by human vascular smooth muscle cells and monocytes within a biodegradable polyurethane scaffold
Xiaoqing Zhang, IBBME, University of Toronto, Toronto, ON, Canada
- P.0738 Controlled delivery of nitric oxide in cardiovascular tissue engineering
Qiang Zhao, College of Life Sciences, Nankai University, Tianjin, P.R. China
- P.0740 BIOWIRE : tissue culture and drug screening platform using high fidelity 3D engineered cardiac tissue
Yimu Zhao, Chemical Engineering and Applied Chemistry, University of Toronto, Mississauga, ON, Canada

Poster Session 1B**Biomaterials and host response**

- P.0742 pH and time dependent antioxidant activity of dextran coated cerium oxide nanoparticles
Ece Alpaslan, Department of Chemical Engineering, Northeastern University, Boston, MA, United States
- P.0744 Understanding the role of the adaptor protein Myd88 in the innate immune response to implanted poly(ethylene glycol) hydrogels
Luke D Amer, University of Colorado, Boulder, CO, United States
- P.0746 Surface adsorbed vitronectin linked to differences in macrophage activity on polycarbonate and polyester surfaces
Brian G Amsden, Chemical Engineering, Queen's University, Kingston, ON, Canada
- P.0748 An in vitro model of foreign body giant cell formation mediated by damage-associated molecular patterns
Jeremy A Antonyshyn, Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.0750 Nanocellulose hydrogels: preparation, characterization and cytotoxicity studies toward biomedical applications
Alex S Basu, Division of Nanotechnology and Functional Materials, Uppsala University, Uppsala, Sweden
- P.0752 Anti-inflammatory coatings on flexible neural probes in the cortex: A chronic in vivo study
Christian Boehler, Department of Microsystems Engineering (IMTEK), Albert-Ludwigs-University, Freiburg, Germany
- P.0754 Targeting and altering in vivo macrophage responses with modified polymer properties
Kaitlin M. Bratlie, Materials Science & Engineering, Iowa State University, Ames, IA, United States
- P.0756 Evaluation of the time-related tissue response to a peritoneal adhesion barrier material
Willi L Wagner, Department of Pathology, University Medical Center Mainz, University of Regensburg, Heidelberg, Germany
- P.0758 Can cobalt or chromium ions induce the migration of T or B lymphocytes?
Isabelle Catelas, Mechanical Engineering, University of Ottawa, Ottawa, ON, Canada
- P.0760 The effect of anodised treatment on zirconium implant at early stages: A preliminary in vivo and in vitro characterization
Silvia M Ceré, Department of Electrochemistry and Corrosion, INTEMA, University of Mar del Plata, CONICET, Mar del Plata, Argentina
- P.0762 Innovative immunomodulatory adhesive systems with anti-inflammatory cytokine release capacity
Nihal Engin Vrana, Protip Medical, Strasbourg, France
- P.0764 The inflammatory response to implanted materials, fibrous capsule characterisation
Brooke Farrugia, Graduate School of Biomedical Engineering, University of New South Wales, Sydney, Australia

15:00 - 16:30

220bcd (P4)

- P.0766 Polydopamine coated porous PLGA microspheres for efficient delivery of antigens and adjuvants to macrophages
Hyo-Eun Jang, Department of Bioscience and Biotechnology, Konkuk university, Seoul, Korea
- P.0768 PLGA microparticle combination therapy induces a tolerogenic phenotype in human monocyte-derived dendritic cells
Benjamin Keselowsky, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- P.0770 Chemical conjugation of zwitterionic polymer protects immunogenic enzyme and preserves activity with no detectable polymer-specific antibody response
Sijun Liu, Department of Bioengineering, University of Washington, Seattle, WA, United States
- P.0772 Polydimethylsiloxane/calcium phosphate nanoparticles developed by biomimetic technique to produce tracheobronchial stents
Luís Alberto Loureiro Dos Santos, Engineering Materials Department, Federal University of Rio Grande do sul, Porto Alegre, Brazil
- P.0774 Relationship of UDP-glucose dehydrogenase activity and in vitro hyaluronic acid release by human fibroblast-like synoviocytes
Colleen Mathieu, Department of Biomedical Engineering, École Polytechnique de Montréal, Montréal, QC, Canada
- P.0776 Artificially-assisted nerve-regeneration in brachial plexus lesions can be better studied in the ovine animal model
Antonio Merolli, Orthopedic Department, Università Cattolica, Rome, Italy
- P.0778 Effects of cobalt and chromium ions on HIF-1 α expression and oxidative stress in macrophages in vitro
Zeina Salloum, Department of Biochemistry, Microbiology and Immunology, University of Ottawa, Ottawa, ON, Canada
- P.0780 Polyanhydride-Releasing Oral MicroParticle Technology (PROMPT) as a strategy for subunit vaccine administration
Lindsey A Sharpe, The University of Texas at Austin, Austin, TX, United States
- P.0782 Biodegradable Bicomponent Fiber Stents with Core/Sheath Configuration Using Polydioxanone and Poly-L-Lactic Acid
Jun Sik Son, High-Tech Fiber R&D Headquarters, Korea Textile Development Institute (KTDI), Daegu, Korea
- P.0784 Biomaterial induced NET formation on hydrophobic surfaces supports blood coagulation
Claudia Sperling, Max Bergmann Center, Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany

Poster Session 1B**Innovation in fabrication**

- P.0786 Development of three-dimensional human skin models by cell coating technology for alternative systems to animal testing.
Takami Akagi, Graduate School of Frontier Bioscience, Osaka University, Suita, Japan
- P.0788 Chitosan:PEGDA Hybrid-Gel Scaffolds Printed by Stereolithography
Ozan Akkus, Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH, United States
- P.0790 Barium-gelled alginate microcapsules do not exhibit sodium-induced isotropic swelling noted with calcium-gelled microcapsules
Michael Alexander, University of California Irvine, Orange, CA, United States
- P.0792 Direct metal laser sintering (dmls) for application in manufacture using prostheses of mandibular customized condyles coated with sub microstructured zirconia
Fabiano Costa Almeida, Faculty of Chemical Engineering, Institutos Nacionais de Ciência e Tecnologia, BioFabris, Campinas, Brazil
- P.0794 Bioprinting technique incorporating topographical guidance for stem cell alignment, precision deposition and promoting cardiomyocyte differentiation
Ramya Bhuthalingam, School of Materials Science & Engineering, Nanyang Technological University, Singapore, Singapore
- P.0796 Easy and inexpensive methodology for 3D printing of drug-releasing osteoinductive scaffolds
Pedro F Costa, Utrecht Biofabrication Facility & Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.0798 Solvent based 3D printing of hydroxyapatite laden scaffolds for bone tissue engineering
Spencer W Cutting, Biology, Walla Walla University, College Place, WA, United States
- P.0800 Electrospinning and Direct Writing: Why Polymer Melts are Excellent Fluids for 3D Printing
Paul Dalton, University of Würzburg, Würzburg, Germany
- P.0802 One-step fabrication of polymeric hybrid particles with various anisotropic architectures via a microfluidic-assisted phase separation process and their application in controllable drug delivery
Hua Dong, Department of Biomedical Engineering, School of Material Science and Engineering, South China University of Technology, Guangzhou, P.R. China
- P.0804 Fabrication of tissue-scale, cell-laden, microfluidic hydrogel scaffolds
Shannon L Faley, Mechanical Engineering, Vanderbilt University, Nashville, TN, United States

- P.0806 Multichannel 3D plotting for complex tissue equivalents and implants for defects at tissue interfaces
Michael Gelinsky, Centre for Translational Bone, Joint and Soft Tissue Research, TU Dresden, Dresden, Germany
- P.0808 Manufacture of polycaprolactone and bovine bone filling Nukbone scaffold by 3D plotting system for bone tissue engineering
Karla Karina Gómez Lizárraga, Metallics and Ceramics, Universidad Nacional Autónoma de México, Mexico, Mexico
- P.0810 Development of corneal lenticule-reconstituted collagen composite sheet for corneal epithelium regeneration
Hyeonjun Hong, Pohang University of Science and Technology, Pohang, Korea
- P.0812 Development of three-dimensional scaffolds with controlled architecture for cell migration from defined points for more informative invasion/migration assays in vitro
Robert D Hume, Department of Pathology, University of Cambridge, Cambridge, United Kingdom
- P.0814 In vitro replication of 3D-tumor blood capillaries for evaluation of EPR effect of nanoparticles
Misaki Komeda, Department of Applied Chemistry, Osaka University, Suita city, Japan
- P.0816 Quantitative determination of 1,4-Dioxane in a novel three-dimensional (3D) porous scaffold by GC-MS
Yuxiao Lai, Centre for Translational Medicine Research and Development, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
- P.0818 Hydrogels with continuously variable stiffness defined by dual-color micro-stereolithography
Niels B Larsen, Dept. of Micro- and Nanotechnology, DTU Nanotech, Technical University of Denmark, Kgs. Lyngby, Denmark
- P.0820 Mussel-inspired adhesive material for 3D-bioprinting
Daiheon Lee, Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
- P.0822 Preparation of Mussel-Inspired 3D Polycaprolactone Scaffolds and Grafted with rhBMP-2 for Bone Tissue Engineering
Sang Jin Lee, Department of Maxillofacial Biomedical Engineering and Institute of Oral Biology, Kyung Hee University, Seoul, Korea
- P.0824 Chitosan-coated alginate tissue scaffold constructed by three-dimensional plotting technique used for drug and cell delivery
Hsin-Yi Lin, Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, Taiwan
- P.0826 Biodegradable waterborne polyurethane to fabricate scaffold for soft tissue engineering
Feng Luo, College of Polymer Science and Engineering, Sichuan University, Chengdu, P.R. China
- P.0828 Modified amphiphilic copolymer based hydrogels as reinforcement for 3D biofabrication
Jos Malda, Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.0830 Bioprinting multilayered hydrogels using 3D suspended manufacturing
Sam R Moxon, Pharmacy, University of Huddersfield, Huddersfield, United Kingdom
- P.0832 Using biobots for standardizing the 3D bioprinting of bioinks
Timothy R Olsen, BioBots, Philadelphia, PA, United States
- P.0834 Hyaluronan-Based Two-Photon Initiator with Enhanced Biocompatibility
Aleksandr Ovsianikov, Institute of Materials Science and Technology (E308), Technische Universität Wien, Vienna, Austria
- P.0836 Thermally-controlled Bioprinting of Bone Marrow Stem Cell Loaded by Composite Collagen Type -I / Pluronic F127 Ink for Bone Regeneration
Ibrahim T Ozbolat, Engineering Science and Mechanics, Penn State University, University Park, PA, United States N/A
- P.0838 Preparation of an MTA through spray-pyrolysis
Sanghoon Rhee, Department of Dental Biomaterials Science, Seoul National University, Seoul, Korea
- P.0840 Synthesis of photocrosslinkable divinyl-fumarate poly-epsilon-caprolactone for stereolithography applications
Alfredo Ronca, Institute for Polymers, Composites and Biomaterials, National Research Council of Italy, Naples, Italy
- P.0842 Bioengineering functional cardiac tissues
Vahid Serpooshan, School of Medicine, Cardiovascular Institute, Stanford University, Stanford, CA, United States
- P.0844 Effect of glycerol concentrations on the mechanical properties of additive manufactured porous calcium polyphosphate structures for bone substitute applications
Esmat Sheydaeian, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, Canada
- P.0846 Engineering scaffolds for bone tissue engineering using cell-laden gelatin methacrylate hydrogels
Pranav Soman, Biomedical and Chemical Engineering, Syracuse University, Syracuse, NY, United States
- P.0848 Thermogelling and chemoselectively cross-linked hydrogels for 3D bioprinting
Tina Vermonden, Pharmaceuticals, Utrecht Institute of Pharmaceutical Sciences, Utrecht University, Utrecht, Netherlands
- P.0850 Stochastic simulation of diffusion of macromolecules encapsulated in electrospun Fibers
Karen C Yan, Mechanical Engineering, The College of New Jersey, Ewing, NJ, United States
- P.0852 Biofunctionalization of titanium surface modified by heparin-VEGF-fibronectin LBL to improve endothelial cell proliferation and blood compatibility
Tieying Yin, Bioengineering College, Chongqing, P.R. China
- P.0854 Rapid multi-material bioprinting
Shrike Zhang, Harvard Medical School, Cambridge, MA, United States N/A
- P.0856 Effect of cold rolling on the aging phenomena in beta titanium alloy prepared by vacuum arc re-melting process
Zhiqiang Zhao, Department of Materials Science and Engineering, Chonnam National University, Gwangju, Korea

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220bcd (P5)

Poster Session 1B**Mechanics and modeling biomaterials science and engineering**

- P.0872 Measurement of pressure-expansion behaviour required in infant airway stents using digital image correlation (DIC) in rabbit trachea
Isaiah IA Adekanmbi, School of Engineering, Glasgow University, Glasgow, United Kingdom
- P.0874 In Vitro cytotoxicity with titanium treated the plasma for endothelialisation of DAV's
Aron J P Andrade, Divisão de Bioengenharia - Centro de Engenharia em Assistência Circulatória, Instituto Dante Pazzanese de Cardiologia / Fundação Adib Jatene, São Paulo, Brazil
- P.0876 Tensile properties of blends of Ultra-high molecular weight Polyethylene with Very Low Molecular Weight Polyethylenes
Anuj Bellare, Orthopedic Surgery, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, United States
- P.0878 Radial strength comparison of the PLA/PCL blends tubes manufactured by different fabrication processes.
Pooja Bhati, Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi, India
- P.0880 Modeling membrane-curvature sensing and generation by proteins
Michael D Birch, Physics & Astronomy, McMaster University, Hamilton, ON, Canada
- P.0882 Fatigue and fracture behavior of Ti-6Al-4V alloy modified with titanium dioxide nanotubes
Carolina C Bortolan, Department of Materials Engineering (DEMa), Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.0884 Degradation behaviors of magnesium alloy- Finite element model and experimental validation
Chia-Jung Chang, Department of Biomedical Engineering, National Cheng Kung University, Chiayi City, Taiwan
- P.0886 Rigidity and elastic modulus of the avian egg
Pin-Yi Chen, Mechanical Engineering, National Taiwan University, Taipei, Taiwan
- P.0888 Thermal analysis of Ti-15Zr-based alloys with Mo addition for use as biomaterial
Luis A Rocha, Departamento de Física, Universidade Estadual Paulista (UNESP), Faculdade de Ciências de Bauru, Bauru, Brazil
- P.0890 Viscoelastic properties of collagen hydrogels
Bernard Drouin, Mining, Metallurgical and Materials, Laval University, Québec, QC, Canada
- P.0892 Modeling and simulation of porous structures for load-bearing implants
Mathieu Dumas, Mechanical engineering, École de Technologie Supérieure, Sherbrooke, QC, Canada
- P.0894 Applying artificial neural networks to predict the dissolution profile of silica-calcium phosphate composite (SCPC) particles in vitro
Ahmed Ei-Ghannam, Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte, Charlotte, NC, United States
- P.0896 Simulation of cellular traction force reconstruction profile of silica-calcium phosphate composite (SCPC) particles in vitro
Yi-Ting Chan
- P.0898 In vitro degradation behavior of functionalized cellulosic fibers reinforced PLA composite
M Reza Foruzanmehr, Carrefour of Innovative Technologies and Ecodesign, Université de Sherbrooke, Sherbrooke, QC, Canada
- P.0900 Endometrium Tissue Culture for In Vitro Embryo Implantation
Toshia Fujisato, Biomedical Engineering, Osaka Institute of Technology, Osaka, Japan
- P.0902 Combined experimental and computational study of process-property relationships for bioabsorbable polymers
Chirag R Gajjar, North Carolina State University, Raleigh, NC, United States
- P.0904 Multi-scale molecular modeling of fluorescent rosette nanotubes
Arthur A Gonzales III, Chemical Engineering, Northeastern University, Boston, MA, United States
- P.0906 Biomechanical response of biopolymeric nanoparticle conditioned dentin: A moiré interferometric analysis
Alice, Fang-Chi Li, Department of Dentistry, University of Toronto, Toronto, ON, Canada
- P.0908 Multiscale characterisation of mechanical properties of hydrogels
William V Megone, School of Engineering and Material Science, Queen Mary University of London, London, United Kingdom
- P.0910 Uniaxial deformation effect on the fatigue-corrosion resistance of the ISO 5832-1 stainless steel for biomaterials application
William Naville, Material Engineering, University Center FEI, São Paulo, Brazil
- P.0912 Scale-dependent fluid permeability of tissue engineering scaffolds as a result of structure geometry and mechanics
Giovanni S Offeddu, Department of Engineering, University of Cambridge, Cambridge, United Kingdom
- P.0914 Molecular level analyses of mechanical properties of basic medical used plastics irradiated by Co-60 gamma-ray for sterilization
Masayuki Okazaki, Master Course of Management in Health Care Sciences, Graduate School of Health Care Sciences, Jikei Institute, Osaka, Japan
- P.0916 Lightweight design of high strength medical nickel free stainless steel implants
Yibin Ren, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China
- P.0918 Using simulations with realistic fibrous network geometry to determine the achievable ranges of macroscopic mechanical behaviors of elastomeric scaffolds
Michael Sacks, ICES, Austin, TX, United States

- P.0920 Evaluation of physical property for syndiotactic PVA-H by hot pressing method
Tomoyo Sakaguchi, Materials Science, Japan Advanced Institute of Science and Technology, Nomi, Japan
- P.0922 Micropillar arrays selectively coated with humidified microcontact printing reveal cue-dependent traction forces and molecular recruitment within single cells
Abhishek Sinha, McGill University, Montreal, QC, Canada
- P.0924 A minimal micromechanical model for the viscoelasticity in biophysical filamentous networks
Erik Van Der Giessen, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands
- P.0926 Microstructure and biomechanical properties of Ti-3Zr-2Sn-3Mo-25Nb biomedical alloy with nanostructure by ARB Process
Zhentaoyu, Biomaterial Research Center, Northwest Institute for Nonferrous Metal research, Xi'an, P.R. China
- P.0928 Modeling and simulation of the response of heterograft biomaterials to fatigue.
Will Zhang, Biomedical Engineering, UT ICES, Austin, TX, United States

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Poster Session 1B

Surfaces and interfaces

- P.0930 Augmenting the bioactivity of polyetheretherketone
Sara Ajami, Institute of Orthopaedics, University College London, London, United Kingdom
- P.0932 Poly(L-lactide) nanofibrous meshes loaded with detonation diamond particles as substrates for the adhesion, growth and osteogenic differentiation of human osteoblast-like cells
Lucie Bacakova, Biomaterials and Tissue Engineering, Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic
- P.0934 'Degradable' poly(vinyl alcohol) iron oxide hydrogel
Dawn Bannerman, Biomedical Engineering, University of Western Ontario, London, ON, Canada
- P.0936 Titanium with nanotopography induces osteoblast differentiation mediated by endogenous BMP-2/4
Marcio M Beloti, School of Dentistry of Ribeirao Preto, University of Sao Paulo, Ribeirao Preto, Brazil
- P.0938 A nondestructive, diazonium chemistry-based technique as a platform for improving the integration of implants in the body
Emily C Buck, Materials Engineering, McGill University, Outremont, Canada
- P.0940 Development of protein biosensors using surface-imprinted silica-gold nanoshells
Heidi R Culver, Biomedical Engineering, University of Texas at Austin, Austin, TX, United States
- P.0942 Two of protein-protein interaction regulations on scaffold surface to direct stem cell differentiation
Guo-Chung Dong, Institute of Biomedical Engineering & Nanomedicine, National Health Research Institutes, Miaoli, Taiwan
- P.0944 Ultra high molecular weight polyethylene based nano-composite in medical application: thermal, mechanical and tribological properties before and after aging and gamma irradiation
Nazanin Emami, Biotribology and Biomaterials group, Division of Machine Elements, Applied Engineering and Mathematics, Lulea, Sweden
- P.0946 Gold nanoparticles co-functionalized with polyethylene glycol and receptor mediated endocytosis peptide for cellular uptake
Emma P Harrison, Computing and Engineering, Ulster University, Newtownabbey, United Kingdom
- P.0948 In-vitro analysis of cell viability of an optimized tio2 bond-coat deposited by hvof for biomedical applications
Jennifer A Hermann-Muñoz, Advanced Ceramics Group, Cinvestav Unidad Querétaro, Queretaro, Mexico
- P.0950 Probing the mechanism of targeted nanoparticle drug delivery to the brain using covalently linked, multispectral quantum dots
Kyle T Householder, Barrow Brain Tumor Research Center, Barrow Neurological Institute, Phoenix, AZ, United States
- P.0952 On the stability of adsorbed and grafted fibronectin coatings on fluorocarbon surfaces for cardiovascular applications
Ludivine Hugoni, Department of Mining, Metallurgical and Materials Engineering & University Hospital Research Center, Laboratory for Biomaterials and Bioengineering (CRC I), Québec City, QC, Canada
- P.0954 Enhanced bone regeneration on the fusion protein tethered scaffolds
Minsil Kang, Institute of Tissue Regeneration Engineering, Cheonan, Korea
- P.0956 Molecular complexation of curcumin with Eudragit® EPO to enhance the aqueous solubility, stability and bioavailability of curcumin
Siddharth S Kesharwani, Department of Pharmaceutical Sciences, College of Pharmacy, South Dakota State University, Brookings, SD, United States
- P.0958 Facile surface grafting of zwitterionic polymers via enzyme-mediated reaction for enhanced antifouling property
Ho Joon Kwon, Ajou University, Suwon, Korea
- P.0960 High Fatigue and Wear Resistance of Phospholipid Polymer Grafted Cross-linked Polyethylene with Anti-oxidant Reagent
Masayuki Kyomoto, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan
- P.0962 In vitro testing of thick film and co-fired implantable ceramics with high-density printed and laser patterned Pt/Au electrodes: cytocompatibility, electrical performance, and protein adsorption.
Henry T Lancashire, Institute of Orthopaedics and Musculoskeletal Science, University College London, London, United Kingdom
- P.0964 Nanoporous membrane-embedded external power-free microfluidic biosensor
Jeong-Hun Lee, Department of Polymer Science and Engineering, Chungnam National University, Daejeon, Korea
- P.0966 Interaction of phosphorylcholine with fibronectin coatings: the relationship between surface characterization and biological performances
Vanessa A Montano-Machado, Dept. Min-Met-Materials Engineering, Université Laval, Quebec, QC, Canada

- P.0968 Insulin-like growth factor-1 release regulates chondrocyte migration and cartilage repair
Christopher Z Mosher, Biomedical Engineering, Columbia University, New York, NY, United States
- P.0970 Design of graphene-like boron nitride/gelatin electro spun nanofibers as new bio nanocomposite material for tissue engineering
Sakthivel N Nagarajan, Institute of European Membranes, Montpellier, France
- P.0972 MgO Nanoparticles as an Antimicrobial Agent for Reducing Polymeric Device Infections
Nhu-Y Nguyen, Bioengineering, Microbiology, University of California Riverside, Moreno Valley, CA, United States
- P.0974 Fabrication of biodegradable multi-layered nanosheets to reinforce the bursting strength and maintain high adhesiveness for a wound dressing in partial hepatectomy
Yosuke Okamura, Course of Industrial Chemistry, Graduate School of Engineering, Tokai University, Kanagawa, Japan
- P.0976 Biofunctionalized organic electrochemical transistors for in vitro metabolite sensing
Roison Owens, Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, Gardanne, France
- P.0978 Silver nanoparticles in glass ionomer cements: surface characterization and validation of the antibacterial activity
Lilian Santos Paiva, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil
- P.0980 Targeted TMC-based non-viral vectors for BDNF neuroprotective gene therapy in nerve injury
Ana Paula Pego, Instituto Nacional de Engenharia Biomédica (INEB), Porto, Portugal
- P.0982 Laser lithography for dental alloy treatment - biological response
Maksym V Pogorielov, Medical Institute, Sumy State University, Sumy, Ukraine
- P.0984 Copper an alternative antimicrobial coating
Cornelia Prinz, R&D, DOT Medical Implant Solutions, Rostock, Germany
- P.0986 Antimicrobial Activity of Bone Cements Containing Organic Nanoparticles
Polina Prokopovich, School of Pharmacy, Cardiff University, Cardiff, United Kingdom
- P.0988 Biomedical Coatings prepared by Magnetron Sputtering
Sandra E Rodil, Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Mexico, Mexico
- P.0990 Preclinical Development of Porous Silicon Nanocomposites For Translational Biomedical Applications
Hélder A Santos, Division of Pharmaceutical Chemistry and Technology, University of Helsinki, Helsinki, Finland
- P.0992 Magnetic nano-architectures intended for bone cancer treatment: physical and biological characterization
Stefania Scialla, Department of Engineering for Innovation, University of Salento, Lecce, Italy
- P.0994 Mesoporous silica nanoparticle supported lipid bilayers for targeted antibiotic therapeutics
Brandon V Slaughter, Advanced Materials Lab, Sandia National Laboratory, Albuquerque, NM, United States
- P.0996 Pluronic nanogel containing calcium carbonate as an ultrasound enhanced contrast agent
Giyong Tae, School of Materials Science and Engineering, GIST, Gwangju, Korea
- P.0998 Immobilization of quorum sensing inhibitors to develop antibacterial biomaterials
Aditi Taunk, School of Chemistry, University of New South Wales, Australia, Sydney, Australia
- P.1000 Characterizing electrospun PLGA/PCL matrices for reconstructive pelvic surgery: A role of fiber diameter in new matrix formation and fibrosis
Mahshid Vashghian, Gynecology, Amsterdam Medical Center, Amsterdam, Netherlands
- P.1002 Chemical and heat treatments for preparation of bioactive Ti metal able to release Sr and Ag ions
Seiji Yamaguchi, College of Life and Health Sciences, Chubu University, Kasugai, Japan
- P.1004 Drug-free macromolecular therapeutics - a new paradigm in nanomedicines
Jane J Yang, Department of Pharmaceutics and Pharmaceutical Chemistry, University of Utah, Salt Lake City, UT, United States
- P.1006 Effects of Sn addition on bio-degradation behavior of Mg-1Zn-1Zr-xSn (x = 1, 3, 5) alloy prepared by Powder in Tube Rolling (PTR)
Ahmad Zakiyuddin, School of Materials Science and Engineering, Chonnam National University, Gwangju, Korea
- P.1008 Functionalization of boron nitride nanosphere for enhancing the immunostimulatory effect of CpG oligodeoxynucleotides
Huijie Zhang, Jiangnan University, Wuxi, P.R. China

15:00 - 16:30

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Poster Session 1B**Clinical performance of biomaterials**

- P.1032 Bioactive iron foam modified with CaP coating for bone scaffold applications
Hendra Hermawan, Mining, Metallurgical and Materials Engineering, Laval University, Quebec City, QC, Canada
-
- P.1034 Clinical Relevance of Corrosion Patterns Attributed to Inflammatory Cell Induced Corrosion: A Retrieval Study
Hayat Khan, Division of Surgery and Interventional Science, Institute of Orthopaedics, Kent, United Kingdom
-
- P.1036 Biodegradable polymer/metal composites for bone repair: what standards apply?
Marcela Lieblich, Physical Metallurgy, Centro Nacional De Investigaciones Metalúrgicas (CENIM), Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain
-
- P.1038 Corrosion and cell viability of high-purity Mg and Mg-1Ca alloy
Hua Lu, Shanghai Biomaterials Research & Testing Center, Ninth People's Hospital, School of Medicine, Shanghai Jiaotong University, Shanghai, P.R. China
-
- P.1040 The biodegradability and biological properties of the second phase of Mg₁₇Al₁₂ in Mg-Al-Zn Alloys
Lili Tan, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China
-
- P.1042 Investigation of human urothelial cells in response to Magnesium-Zinc-Strontium Alloys in exposure culture.
Qiaomu Tian, Bioengineering, University of California Riverside, Riverside, CA, United States
-
- P.1044 Tailoring the degradation and biological response of a magnesium-strontium alloy for potential bone substitutes application
Peng Wan, Institute of Metal Research, CAS, Shenyang, P.R. China
-
- P.1046 Buffer-induced in vitro corrosion of magnesium alloys: considerations for standardisation of in vitro testing
Ryan N Wilkes, Department of Mechanical Engineering, University of Canterbury, Christchurch, New Zealand
-
- P.1048 Study on the rapamycin release from a PLGA layer on biodegradable Mg-based drug-eluting Stents
Guangyin Yuan, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China
-
- P.1050 Corrosion and cell behaviour of phosphate mineral coating on magnesium alloy
Ying Zhao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
-

15:00 - 16:30

220bcd (P1)

Poster Session 2A

Biomaterials for therapeutic and diagnostic delivery

- P.2001 Rational design for cellular delivery of peptides
Handan Acar, Institute for Molecular Engineering, The University of Chicago, Chicago, IL, United States
- P.2003 Controlling thermal gelation properties of novel Tetricon hydrogel-based tissue adhesive
Martin F Alejos, Bioengineering, Clemson University, Clemson, SC, United States
- P.2005 Bio-inspired coating of gold nanorods with antimicrobial polyphenols
Devang R Amin, Bioengineering, UC Berkeley, Berkeley, CA, United States
- P.2007 Investigating the enzymatic processing and gene knockdown of micelle-conjugated siRNA against glioblastoma
Amy E Arnold, University of Toronto, Toronto, ON, Canada
- P.2009 Engineering of hyaluronic acid-based nanogels with tunable thermosensitivity and stability
Rachel Auzely-Velty, Cermav-CNRS, University Grenoble Alpes, Grenoble Cedex 9, France N/A
- P.2011 Cytocompatible magnetic polymer nanoparticle covered with phospholipid polymer brush layer for in situ analysis of time-dependent cell functions
Yusuke Bansyo, The University of Tokyo, Tokyo, Japan N/A
- P.2013 Enhanced mucus permeability and transfection of coating poly(β -amino ester)s/DNA complexes with poly(acrylic acid)-bromelain
Salvador Borrós, Grup d'Enginyeria de Materials, Institut Químic de Sarrià, Universitat Ramon Llull, Barcelona, Spain N/A
- P.2015 Layer-by-layer nanoparticles for the targeted co-delivery of cisplatin and EZH2 siRNA in a model of high grade serous ovarian cancer
Santiago Correa, Biological Engineering, Massachusetts Institute of Technology, Allston, MA, United States N/A
- P.2017 HER2+ peptide conjugated and pH responsive polyethylene glycol-poly(lactic-co-glycolic) acid (PEG-PLGA) nanoparticles tested in novel transgenic mouse tumor model
Yasmine R Doleyres, Macromolecular Sciences and Engineering Program, University of Michigan, Ann Arbor, MI, United States N/A
- P.2019 2, 5-Dimethoxy-2, 5-Dihydro-Furan (DMDF) crosslinked radio-opaque biodegradable antimicrobial sutures
Nimmy K Francis, School of Medical Science & Technology, Indian Institute of Technology, Kharagpur, Kharagpur, India N/A
- P.2021 Situation-adjusted anticoagulant release can simulate feedback responsive behavior of the blood vessel wall
Heather M Weber, Leibniz Institute of Polymer Research Dresden, Dresden, Germany N/A
- P.2023 Reaction kinetics of bioinspired (poly)phenolic coatings on titanium implant surfaces
Sebastian Geissler, Department of Biomaterials, Institute of Clinical Dentistry, University of Oslo, Oslo, Norway N/A
- P.2025 Impact of radiation sterilization on the degradation behavior of plla tubing for absorbable cardiovascular stents
Ji Guo, U.S. Food and Drug Administration, Silver Spring, MD, United States N/A
- P.2027 Hyaluronan-modification boosts the nanoparticle uptake by trabecular meshwork cells
Michaela A Guter, Department of Pharmaceutical Technology, Faculty of Chemistry and Pharmacy, University of Regensburg, Regensburg, Germany N/A
- P.2029 Evaluation of desolve, a drug eluting bioresorbable scaffold in a porcine coronary artery model
Louis-Georges Guy, AccellLAB Inc., Boisbriand, QC, Canada N/A
- P.2031 Modelling mammary tumour invasiveness using engineered anisotropic collagen scaffolds
Robert D Hume, Department of Pathology, University of Cambridge, Cambridge, United Kingdom N/A
- P.2033 Injectable calcium phosphate cements loaded with local analgesics: Design and preliminary "in vivo" results
Pascal Janvier, Laboratoire Chimie et Interdisciplinarité, Synthèse, Analyse, Modélisation (CEISAM), Faculty of Sciences, Nantes, France N/A
- P.2035 Immobilization of cell adhesive peptide on polymeric and metallic surfaces using dopaquinone produced by the direct oxidation of tyrosine residue
Sachiro Kakinoki, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan N/A
- P.2037 Effects of micropattern stripe width on differentiation of mesenchymal stem cells into vascular smooth muscle cells
Naoki Kawazoe, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan N/A
- P.2039 CTHRS-AuNP-SVVC—A new gold nanoparticulate molecular imaging and therapy agent for treating pancreatic cancer patients
Menka Khoobchandani, Radiology, University of Missouri, Columbia, MO, United States N/A
- P.2041 Mussel-inspired MPC polymer layer fabricated on hydroxyapatite
Yoichiro Kozaki, the University of Tokyo, Tokyo, Japan N/A
- P.2043 Effect of peptides derived from BMP-9 on human neuroblastoma SH-SY5Y cell differentiation and their encapsulation into chitosan nanoparticles as a potential treatment for Alzheimer's disease
Marc-Antoine Lauzon, Department of Chemical and biotechnological engineering, Université de Sherbrooke, Sherbrooke, QC, Canada N/A
- P.2045 Controlled release of multilaminated therapeutic lens containing drug
Ji Yun Lee, Department of Interdisciplinary Material Science and Engineering, Sungkyunkwan University, Suwon, Korea N/A
- P.2047 Novel fabrication of fluorescent silk utilized in biotechnological and medical applications
Ok Joo Lee, Nano Bio Regenerative Medical Institute, Hallym University, Chuncheon, Korea N/A

- P.2051 Targeted photothermal therapy of cancer cells using folic acid-modified gold nanostars
Jingchao Li, National Institute for Materials Science, Tsukuba, Japan N/A
- P.2053 Distribution of systemically administered nanoparticles following cardiac ischemia-reperfusion injury reveals a size-dependent effect
David J Lundy, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan N/A
- P.2055 Self-assembly as a design principle in the development of binary anti-thrombotic and anti-biofouling coating with exceptional properties
Yan Mei, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada N/A
- P.2057 Analysis and control of poly(beta-amino ester) nanoparticle properties for enhanced gene delivery
Arman Mohsen Nia, Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, United States N/A
- P.2059 Live monitoring of intracellular fate of novel superparamagnetic iron-doped hydroxyapatite nanoparticles
Monica Montesi, Bioceramics and Bio-hybrid Composites Group, Institute of Science and Technology for Ceramics (ISTEC), National Research Council of Italy (CNR), Faenza, Italy N/A
- P.2061 Antitumor effect of ternary complex with gene, peptide, and transferrin-grafted LMWSC for cancer therapy
Jae-Woon Nah, Polymer Science and Engineering, Sunchon National University, Jeonnam, Korea N/A
- P.2063 Formulation design of polymer nanosheets for controlled drug release
Keisuke Nishiwaki, Department of Life Science and Medical Bioscience, Waseda University, Tokyo, Japan N/A
- P.2065 Polyion-complex-coated biodegradable polymeric micelles exhibiting cell-specific uptake and dual-stimuli-responsive degradation
Yuichi Ohya, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan N/A
- P.2067 Cellular interaction of polyglycerol dendrimers and those derivatives
Tooru Ooya, Graduate School of Engineering, Department of Applied Chemistry, Kobe University, Kobe, Japan N/A
- P.2069 In vitro and in vivo study of controlled calcium phosphate release from absorbable polymers
Iwan Palmer, Bioengineering Research Group, Queen's University Belfast, Belfast, United Kingdom N/A
- P.2071 New folic acid-functionalized acrylate nanoparticles for an active targeting of DNA towards cancer cells
Siriana Paonessa, Dipartimento di Ingegneria dell'Informazione, University of Pisa, Pisa, Italy N/A
- P.2073 Simulation of drug release and mobility in healthy and osteoporotic bone
Marcus Rohnke, Institute for Physical Chemistry, Justus-Liebig University Giessen, Giessen, Germany N/A
- P.2075 Dual drug combination: an effective coating for drug eluting stent in the treatment of obstructive coronary artery disease
Purandhi Roopmani, Centre for Nanotechnology and Advanced Biomaterials (CeNTAB), SASTRA University, Thanjavur, India N/A
- P.2077 Poly(beta-amino ester)-Poly(ethylene glycol) Micelles for Intracellular Therapeutic Drug Delivery
James G Shamul, Biomedical Engineering, Johns Hopkins University, Baltimore, MD, United States N/A
- P.2079 Rational design of multifunctional peptide amphiphiles for micelle self-assembly and intracellular delivery
Yejiao Shi, School of Engineering and Materials Science, Queen Mary, University of London, London, United Kingdom N/A
- P.2081 Characterization of tertiary amine methacrylate nanogels for the co-delivery of siRNA and chemotherapeutic agents
David S Spencer, McKetta Department of Chemical Engineering, The University of Texas at Austin, Austin, TX, United States N/A
- P.2083 Variation of single cell nanomechanics on micropatterned surfaces
Xinlong Wang, National Institute for Materials Science, University of Tsukuba, Tsukuba, Japan N/A
- P.2085 Efficacy of higher doses of tobramycin and vancomycin released from commercial local delivery device
Carlos M Wells, Biomedical Engineering, The University of Memphis, Memphis, TN, United States N/A
- P.2087 Hydrophobic interactions between polymeric carrier and palmitic acid-conjugated siRNA improve PEGylated polyplex stability and enhance in vivo pharmacokinetics and pharmacodynamics
Thomas A Werfel, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States N/A
- P.2089 The effects of terminal sterilization upon the biological activity and stiffness of extracellular matrix hydrogels
Lisa White, School of Pharmacy, University of Nottingham, Nottingham, United Kingdom N/A
- P.2091 A Nature Inspired Multifunctional Adhesive for Cartilage Tissue-Biomaterial Integration
Li Xiaoli, The Research Institute of Tsinghua University in Shenzhen, 深圳, P.R. China N/A
- P.2093 Inhibition of bacterial adhesion and biofilm formation by antimicrobial functionalized textured biomaterial surfaces
Lichong Xu, Surgery, Penn State College of Medicine, Hershey, PA, United States N/A
- P.2095 Novel self-strengthening hybrid dentin adhesive via a facile visible-light irradiation triple polymerization
Qiang Ye, Bioengineering Research Center Laboratories, University of Kansas, Lawrence, KS, United States N/A
- P.2097 Promotion of reendothelialization of eluting stents and its mechanism
Tieying Yin, Bioengineering College, Chongqing, P.R. China N/A

15:00 - 16:30

220bcd (P1)

Poster Session 2A

Specific applications of biomaterials

- P.2099 Optimization of biomaterial microenvironment for motor neuron tissue engineering
Elise G Adamson, University of Maryland, Bel Air, MD, United States N/A
- P.2101 From toothpaste to (quotation mark) implant-paste (quotation mark)(colon) A new product for cleaning dental implants
Ashwaq A Al-Hashedi, Dentistry, McGill University, Montreal, QC, Canada N/A
- P.2103 Metals-to-composite dental adhesives based on diazonium chemistry
Omar Alageel, Faculty of Dentistry, McGill University, Montreal, QC, Canada N/A
- P.2105 Tissue engineering cell-based bioelectronics
Ulises Alejandro Aregueta-Robles, Graduate School of Biomedical Engineering, University of New South Wales, Randwick, Australia N/A
- P.2107 Biocompatibility of a novel expandable threaded screw using an ovine bilateral femoral model: a preliminary study
Michel Assad, Orthopedics and Biomaterials, AccelLAB Inc., Boisbriand, QC, Canada N/A
- P.2109 Porcine urinary bladder matrix does not generate appreciable de novo muscle tissue in rat models of volumetric muscle loss injury
Amit Aurora, Extremity Trauma and Regenerative Medicine, U.S. Army Institute of Surgical Research, Ft. Sam Houston, TX, United States
- P.2111 Mechanical characterization of sequentially layered photo-clickable thiol-ene hydrogels
Aaron H Aziz, Chemical and Biological Engineering, University of Colorado at Boulder, Boulder, CO, United States
- P.2113 Diversification of polyphosphate end-labeling via bridging molecules for development of novel hemostatic agents
Catherine J Baker, Biochemistry, University of Illinois at Urbana Champaign, Urbana, IL, United States
- P.2115 Nitric oxide releasing 58S bioglass scaffolds
Celso A Bertran, Chemistry Institute/ Physical Chemistry Department, University of Campinas, Campinas, Brazil
- P.2117 Accumulation of nanoparticles after acute traumatic brain injury is particle size dependent
Vimala N Bharadwaj, Arizona State University, Tempe, AZ, United States
- P.2119 Effect of fabrication process on the tensile properties of the PLA/PCL blends tubes for bioresorbable stent manufacturing
Naresh Bhatnagar, Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi, India
- P.2121 Physicochemical properties of hydrogel matrices based on N-acryloyl aminocaproic acid (A6ACA) stabilized with guar gum
Katarzyna M Bialik-Wąs, Cracow University of Technology, Cracow, Poland
- P.2123 Schwann cell biocompatibility of polycaprolactone/chitosan electrospun scaffolds
Ena D Bolaina-Lorenzo, Unidad de Materiales, Centro de Investigación Científica de Yucatán, Yucatán, Mexico
- P.2125 Covalently Bonded Antimicrobial Monomer for Increased Longevity of Resin Composites
Janaina F Bortolatto, Biomaterials, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada
- P.2127 Hydrogel-based minimally invasive heart patch for mitigation of mitral regurgitation
Gavin J Braithwaite, Cambridge Polymer Group, Boston, MA, United States
- P.2129 Blood vessel count and bone formation after maxillary sinus augmentation
Volker Schmitt, University Regensburg, Regensburg, Germany
- P.2131 Development of functional electrospun fiber mats for potential wound healing and blood conservation
Donald E Brooks, Pathology and Chemistry, University of British Columbia, Vancouver, BC, Canada
- P.2133 Tocopherol and ascorbic acid protect the mechanical properties of bone allograft during gamma irradiation
Athena R Brunt, School of Medical Science, Griffith University, Menzies Health Institute Queensland, Queensland, Australia
- P.2135 The effect of UV crosslinked hydrogels' mechanical stiffness on osteogenic differentiation
Nehar Celikkin, Material Science and Engineering, Warsaw University of Technology, Warsaw, Poland
- P.2137 Polymerization of PEG in blood plasma by coagulation factor XIIIa exhibits a spatially-propagating front and increases the adhesion of clots
Karen YT Chan, Michael Smith Laboratories, University of British Columbia, Vancouver, BC, Canada
- P.2139 Multi-channeled gelatin scaffold incorporated with neurotrophic gradient and nanotopography as nerve guidance conduit for peripheral nerve regeneration
Kai-Chieh Chang, Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan
- P.2141 The influence of lubricant protein concentration and temperature on the wear of UHMWPE against PEEK
Raelene M Cowie, Institute of Medical and Biological Engineering, University of Leeds, Leeds, United Kingdom
- P.2143 Engineering an ultrasound activated implant that provides on demand BMP-2 release for bone regeneration
Gazelle J Crasto, University of Toronto, Toronto, ON, Canada
- P.2145 NewTumor-environment biomimetics delay peritoneal metastasis formation by deceiving and redirecting disseminated cancer cells abstract created on Monday June 29, 2015
Elly De Vlieghere, Laboratory Experimental Cancer Research, University Ghent, Ghent, Belgium
- P.2147 Artificial dense granules, a potential, biomimetic procoagulant agent composed of inorganic polyphosphate, initiates autoactivation of factor XII
Alexander J Donovan, Chemical Engineering, University of Illinois at Chicago, Chicago, IL, United States

- P.2149 Megakaryocytes enhances proliferation but delayed differentiation in stem cells
Alarbi M Emmakah, Biomedical Engineering, University of Bridgeport, Indianapolis, IN, United States
- P.2151 Electrospun PCL coating on biodegradable Fe stents
Silvia Fare, Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy
- P.2153 Human amniotic membrane versus collagen membrane for guided bone regeneration in critical calvarial defect in mice
Jean-Christophe Fricain, Institut National de la Santé et de la Recherche Médicale, Bordeaux, France
- P.2155 Hemocompatible poly(trimethylene carbonate) derivatives for potential application to biodegradable artificial blood vessels
Kazuki Fukushima, Department of Polymer Science and Engineering, Yamagata University, Yonezawa, Japan
- P.2157 Uterine tissue engineering using a decellularized scaffold by hydrostatic pressure
Katsuko S Furukawa, Department of Bioengineering, Department of Mechanical Engineering, University of Tokyo, Tokyo, Japan
- P.2159 An investigation into cell seeding efficiency on dermal scaffolds for in vitro pre-clinical studies.
Elena García-Gareta, RAFT Institute of Plastic Surgery, Northwood, United Kingdom
- P.2161 Engineered small diameter vascular grafts by cell sheet engineering with human umbilical cord vein perivascular cells
Beyza Gokcinar Yagci, Department of Stem Cell Sciences, Institute of Health Sciences, Ankara, Turkey
- P.2163 Novel methods for depyrogenation of bovine-derived collagen
Chloé M Goldbach, Research & Development, NovaBone Products, Alachua, FL, United States
- P.2165 Blood vessel three-dimensional reconstruction of a tissue engineering nerve bridging rat sciatic nerve injury
Leilei Gong, Jiangsu Key Laboratory of Neuroregeneration, Nantong University, Nantong, P.R. China
- P.2167 Development of novel beta Ti-Mo-Zr alloys for biomedical applications
Carlos Roberto Grandini, Physics, Universidade Estadual Paulista (UNESP), Bauru, Brazil
- P.2169 Joint use of chitosan-PGA nerve guidance conduits and bone marrow mesenchymal stem cells to repair 50mm long median nerve defect combined 80mm long ulnar nerve defect in the human upper arm
Xiaokun Gu, Hand Surgery Department, Affiliated Hospital of Nantong University, Nantong, P.R. China
- P.2171 Bimetallic nanoparticles for cancer detection and gene therapy
Qingwen Guan, Mechanical Engineering, The University of Hong Kong, Hongkong, Hong Kong N/A
- P.2173 Surface modification of polylactide by a biodegradable polycarbonate with antithrombogenicity
Yuta Haga, Yamagata university, Yonezawa, Japan
- P.2175 Surface construction of robust extracellular matrix by optimized treatment of polydopamine and fibronectin for cell-coated medical devices
Dong Keun Han, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea
- P.2177 Textile heart valve: fabric construction parameters and in vivo results
Frederic Heim, Laboratoire de Physique et Mécanique Textiles (LPMT), Ecole Nationale Supérieure d'Ingénieurs Sud Alsace, Université de Haute Alsace, Mulhouse, France
- P.2179 Biomaterial education initiative for primary school students
Joshua D Herwig, Biomedical Engineering, University of Memphis, Memphis, TN, United States
- P.2181 Sodium-doped Porous Calcium Polyphosphate - Strength and In vitro Degradation Characteristics
Youxin Hu, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2183 Development of a new orally absorbable lactoferrin-heparin bioconjugate to cure glioblastoma multiforme
Hae Hyun Hwang, Bioengineering, Hanyang University, Seoul, Korea
- P.2185 Development of bone implant based on the preferential orientation of bone ECM that regulates bone mechanical function
Takuya Ishimoto, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Suita, Japan
- P.2187 Microdroplet-based 3D gastric cancer model for evaluation of drug resistance
Minjeong Jang, Korea Advanced Institute of Science & Technology, Daejeon, Korea
- P.2189 Development of a novel polymer for the fabrication of resorbable devices for ligation of vessels
Brad Johns, Business Development, Poly-Med, Inc., Anderson, SC, United States
- P.2191 Galvanic corrosion between CuNiTi arch wires and other metallic alloys for orthodontic applications
Elisa J Kassab, Materials Science and Engineering, PUC Rio University, Rio de Janeiro, Brazil
- P.2193 An examination of compositional dependencies for Y2O3-SrO-Ga2O3-SiO2 glasses: evaluation of CT imageability and chemical durability for radioembolization.
Sharon Kehoe, Applied Oral Sciences, Research & Development, Dalhousie University / ABK Biomedical Inc., Halifax, NS, Canada
- P.2195 Functionalizing trabecular allograft through polymeric coating
Yusuf Khan, Orthopaedic Surgery, University of Connecticut Health Center, Farmington, CT, United States
- P.2197 Characterization of silk/ β^2 -tricalcium phosphate scaffolds for the bone tissue engineering
Gilson Khang, BIN Convergence Technology, Chonbuk National University (CBNU), Jeonju, Korea
- P.2199 Water glass coating on porous calcium phosphate ceramics for improving mechanical properties and cell behaviors
Suhyoung Kim, Materials Science and Engineering, Yeungnam University, Gyeongbuk, Korea

- P.2201 MMP-2 induced peptide delivery from self-assembling nanoscaffolds: glial response and PC12 neurogenesis
Kyle M Koss, Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada
- P.2203 Inhibition of intimal hyperplasia from epigallocatechin-3-O-gallate released by exovascular treatment of electrospun poly(L-lactide glycolic acid) fiber sheets containing epigallocatechin-3-O-gallate in injured abdominal aorta
Mi Hee Lee, Department of Medical Engineering, Yonsei University College of Medicine, Seoul, Korea
- P.2205 The development of a compression and kink resistant nerve guide for the treatment of painful neuromas
Morakot Likhitpanichkul, Research and Development, Collagen Matrix Inc., Oakland, NJ, United States
- P.2207 Controlling the inflammatory response after traumatic brain injury using functionalised self-assembling peptide hydrogels
Francesca Madean, Research School of Engineering, Australian National University, Acton, Australia
- P.2209 Nano-contact printing on ultra-soft substrates to investigate the impact of substrate stiffness on haptotaxis
Donald Macneaney, Biomedical Engineering, McGill University, Montreal, QC, Canada
- P.2211 Evaluation of an interleukin-8 conjugated extracorporeal neutrophil reprogramming device for the treatment of acute inflammatory disorders
Alexander D Malkin, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- P.2213 Antimicrobial effectivity of silver nanoparticles in orthodontics: in vitro study.
America S Mares Garcia, Doctorado Institucional en Ingeniería y Ciencia de Materiales, Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico
- P.2215 Evaluation of mechanical properties of extruded and radial expanded lactoprene® 8812 polymer stents
Seth D McCullen, Poly-Med, Inc., Anderson, SC, United States
- P.2217 The influences of thermally cross-linked gelatin film for intraperitoneal dissemination of tumor cells
Hiroe Miyamoto, Medical Life Science, Doshisha University, Kyotanabe, Japan
- P.2219 Dual neurotrophins-encapsulated electrospun PLCL/SF nerve conduit for nerve regeneration in rabbit
Xiumei Mo, Department name, Donghua University, Shanghai, P.R. China
- P.2221 Clinical outcomes of primary total hip arthroplasty with PMPC-grafted highly cross-linked polyethylene liners
Toru Moro, The University of Tokyo, Tokyo, Japan
- P.2223 Targeted delivery of cisplatin-loaded liposomes to intracranial gliomas
Natalia Nukolova, Department of Fundamental and Applied Neurobiology, The Serbsky National Research Center for Social and Forensic Psychiatry, Moscow, Russian Federation
- P.2225 Effect of High Temperature Melting on radiation cross-linked UHMWPE
Ebru Oral, Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States
- P.2227 Performance of dental implant with varying pitch and varying thread depth
Vinay Patil, Department of Mechanical Engineering, Indian Institute of Technology, Delhi, New Delhi, India
- P.2229 Design, processing and characterization of advanced titanium scaffolds with controlled radial porosity: a new sequential compaction device
Juan José Pavón, Bioengineering, University of Antioquia, Medellin, Colombia
- P.2231 Titanium scaffolds with multi-scale porosity obtained by controlled chemical and electrochemical treatments of porous solids from PM space holder technique
Jean Paul Allain, Department of Bioengineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States
- P.2233 Balancing mineralization, scaffold properties, and cellular response
Kendell M Pawelec, FUJIFILM Europe BV, Tilburg, Netherlands
- P.2235 Macroporous 3D scaffolds for studying mesenchymal stem cell migration and differentiation within cartilage defects
Glendon C Plumton, J. Crayton Pruitt Family Department of Biomedical Engineering, The University of Florida, Gainesville, FL, United States
- P.2237 In-vitro study of the effects of oxidative degradants on thermoplastic polyurethanes
David B Powell, Science & Technology, St. Jude Medical, St. Paul, MN, United States
- P.2239 Fluoride and carbonate co-incorporated porcine bone derived biological apatite stimulates osteogenesis in vitro via WNT/beta-catenin pathway
Wei Qiao, Faculty of Dentistry, The University of Hong Kong, Hong Kong, P.R. China
- P.2241 Mineralized collagen biomaterial for reconstruction of cranial bone defects and its clinical applications
Zhiye Qiu, Beijing Allgens Medical Science and Technology Co., Ltd., Beijing, P.R. China
- P.2243 Phage display derived peptides increase human MSC mediated bone formation in vivo
Harsha Ramaraju, Department of Pediatric Surgery, Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States
- P.2245 Self-assembling peptides for neural regeneration
Julian C Ratcliffe, Monash University, Clayton, Australia
- P.2247 Fabrication of hybrid Ti/PMMA materials for skull prosthesis reconstruction
Melania Reggente, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504 CNRS / Department of Basic and Applied Sciences for Engineering, Université de Strasbourg / Sapienza University of Rome, Strasbourg, France

- P.2249 The synthesization of BSA-coated iron nanoparticles, and the mechanism of their uptake in the mitochondria of MCF7 breast cancer cells
Emily K Reid, McMaster University, Hamilton, ON, Canada
- P.2251 Structural and contractile phenotype regulation of vascular smooth muscle cell sheet using enzymatically degradable hydrogel platform
Nicholas (Nae Gyune) Rim, BME, Boston University, Boston, MA, United States
- P.2253 3D Ti-6Al-4V constructs produced by additive manufacturing induce osteoblast differentiation in vitro and regenerate bone in vivo without exogenous factors
Zvi Schwartz, School of Engineering, Virginia Commonwealth University, Richmond, VA, United States
- P.2255 A 3D fibre composite material to study integrin-mediated cellular behaviour in response to shear and tensile mechanical cues
Sadhana Sharma, Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO, United States
- P.2257 Free radical measurements in gamma-irradiated UHMWPE following 18 years of aging at elevated temperatures
Afsana Sharmin, Department of Physics, University of Memphis, Memphis, TN, United States
- P.2259 Magnesium-oxide loaded biodegradable polymer scaffold for segmental bone defect treatment
Jie Shen, University of Hong Kong, Hong Kong, P.R. China
- P.2261 Loading of titanium nanotubes with bioactive agents for controlled drug release in the implants
Tolou TS Shokuhfar, Bioengineering, University of Illinois at Chicago, Chicago, IL, United States
- P.2263 Exploring tunable and porous PGSm for peripheral nerve repair in vivo
Dharaminder Singh, Materials Science and Tissue Engineering, University of Sheffield, Peterborough, United Kingdom
- P.2265 Gauze with self-propelling microparticles containing thrombin and tranexamic acid drastically improved survival in a swine model of lethal hemorrhage
Alex St. John, Emergency Medicine, University of Washington, Seattle, WA, United States
- P.2267 Tailoring PLGA nanoparticle release profiles via centrifugal fractioning
Sarah E Stabenfeldt, School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, United States
- P.2269 Biodegradable PHA composite scaffolds for bone tissue engineering
Christy Thomas, Faculty of Science and Technology, University of Westminster, London, United Kingdom
- P.2271 In vitro evaluation of thrombogenicity effect of gallium-containing mesoporous bioactive glass
Mark Towler, Mechanical & Industrial Engineering, Ryerson University, Toronto, Canada
- P.2273 Therapeutic hyaluronan-based hydrogel enables local drug delivery for recovery after stroke
Anup Tuladhar, Institute for Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2275 Skull bone regeneration through the application of tissue engineering techniques
Carlos H Valencia, School of Dentistry, Universidad del Valle, Cali, Colombia
- P.2277 Development of anti-Infection trauma devices with drug-releasing and non-fouling modifications
Hao Wang, Teleflex, Cambridge, MA, United States
- P.2279 Preparation and characterization of grady modified poly(dl-lactic acid)/hydroxyapatite porous composite
Youfa Wang, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, P.R. China
- P.2281 Investigating Schwann Cell Growth and Neurite Extension on PVDF-TrFE Scaffolds In Vitro
Siliang Wu, Material Science and Engineering, New Jersey Institute of Technology, Newark, NJ, United States
- P.2283 Enhanced corrosion resistance and biocompatibility of Mg-Zn-Y-Nd alloy achieved with APTES pre-treatment for drug-eluting vascular stent application
Tingfei Xi, Shenzhen Institute, Peking University, Shenzhen, P.R. China
- P.2285 Elucidating tumor-vasculature interactions by patterning endothelial cells into vascular-like structures in 3D biomimetic hydrogels
Fan Yang, Orthopaedic Surgery and Bioengineering, Stanford University, Stanford, CA, United States
- P.2287 Tailoring of the TiO₂ film by H₂SO₄ treatment and UV-irradiation for improving anticoagulant ability and cell compatibility
Ping Yang, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.2289 Nitric oxide producing coating mimicking endothelium function for multifunctional vascular stents
Zhilu Yang, Key Lab. of Advanced Technology for Materials of Education Ministry, Chengdu, P.R. China
- P.2291 Comparing the efficacy of monoer grafted cationised pullulan ad dextran as gene delivery vector
Rekha M. Ramesand

15:00 - 16:30

220bcd (P2)

Poster Session 2A

Biomaterials in cellular engineering

- P.2301 Lego-inspired organ-on-a-chip gelatin methacryloyl microfluidic system
Julio C Aleman, Molecular and Cellular Biosciences, Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC, United States
- P.2303 Engineering 3D muscle microtissues by co-culturing human myoblasts and fibroblasts
Thomas Boudou, CNRS, Grenoble Institute of Technology, Grenoble, France
- P.2305 Human mesenchymal stem cell behavior on segmented polyurethanes prepared with dexamethasone and beta-glycerol phosphate
Jerma H Chan-Chan, Department of Physic, Universidad de Sonora, Hermosillo, Mexico
- P.2307 High-throughput analysis of kinase inhibitor drugs on cardiac function using engineered heart tissue constructs
Genevieve A Conant, Chemical engineering, University of Toronto, Toronto, ON, Canada
- P.2309 In vitro study using calvaria-derived osteogenic primary cultures for evaluation of cytotoxicity of some Ti-based alloys for biomedical applications
Tatiani Ayako Goto Donato, Universidade Estadual Paulista (UNESP), Pederneiras, Brazil
- P.2311 Using micropatterned laminin lines to increase human myotube density and alignment
Rebecca M Duffy, Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- P.2313 Culture dimensionality controls CD44 alternative splicing
Pedro Granja, Instituto Nacional de Engenharia Biomédica / i3S (INEB), Porto, Portugal
- P.2315 Tracing of individual hematopoietic stem cell specification events using Raman Spectroscopy and photonic crystal enhanced microscopy
Brendan Harley, Chemical and Biomolecular Engineering, U Illinois Urbana Champaign, Urbana, IL, United States
- P.2317 Quantifying the mechanics of Idiopathic Pulmonary Fibrosis in 3D microculture systems
Avital Horowitz, Chemical Engineering, McGill University, Montreal, QC, Canada
- P.2319 A two-sided coculture model as a simple tool to track and study cellular events mimicking osteoporosis
Sujit N Kootala, Glycosciences, KTH Royal Institute of Technology University, Uppsala, Sweden
- P.2321 Korean Antheraea yamamai silkworm cocoon
Haeyong Kweon, Sericultural and Apicultural Materials Division, National Academy of Agricultural Science, Wanju-gun, Korea
- P.2323 Isolation of embryonic-like stem cell from human placental villi
Yu-Ching Lin, Institute of Biotechnology, College of Bioscience and Biotechnology, National Cheng Kung University, Tainan, Taiwan

- P.2325 Experimental analysis of effect of electric field on mouse myoblast cells using high throughput microfluidic bioreactor
Sharmistha Naskar, Centre for Biosystems Science and Engineering (BSSE), Indian Institute of Science, Bangalore, India
- P.2327 Apical papilla stem cells and polyurethane based scaffolds, a new approach for the development of constructs in tissue engineering
Luis M Rodriguez-Lorenzo, ICTP-CSIC, Madrid, Spain
- P.2329 Hyaluronan-collagen hydrogels support growth of human fibroblasts and are applicable to experimental skin wounds.
Stephan Thönes, Klinik und Poliklinik für Dermatologie, Venerologie und Allergologie, Universität Leipzig, Leipzig, Germany
- P.2331 Myocardial differentiation of rat mesenchymal stem cells in elastin-like recombinant protein hydrogels
Takayuki Tokushige, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Suita, Japan
- P.2333 Effects of biochemical and mechanical niche cues on mesenchymal stem cell chondrogenesis in 3D hydrogels
Tianyi Wang, Department of Bioengineering, Stanford University, Stanford, CA, United States

15:00 - 16:30

220bcd (P2)

Poster Session 2A

Building blocks

- P.2335 The effect of Iron chelators on bioceramic bone graft remodelling.
Jake Barralet, McGill University, Montreal, Canada
- P.2337 Antimicrobial and cytotoxicity analysis of zinc phosphate cement
Samantha E Booth, Department of Pharmaceuticals, Chemical & Environmental Sciences, University of Greenwich, Kent, United Kingdom
- P.2339 Comparing mechanical properties of silk-coated and collagen-coated hydroxyapatite scaffolds
Diana M Castillo, Biomedical Engineering, University of Texas at San Antonio, San Antonio, TX, United States
- P.2341 Different mechanisms of bone formation of preosteoblast on metals in vitro
Peng Chen, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- P.2343 Gellan gum soft construct for possible applications in skin tissue engineering
Natasa Drnovsek, Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia
- P.2345 Supercritical fluid processing applications in biomaterials
Michael R Favaloro, CompositeTechs, LLC, Amesbury, MA, United States
- P.2347 Implants of composite scaffolds of PLA/HA coated with polypyrrole by plasma for bone neo-tissue in rabbit
Maria G Flores, Department of Physics, Universidad Autonoma Metropolitana, Mexico City, Mexico

- P.2349 Bulk dispersion of single-walled carbon nanotubes in silicones using diblock copolymers
Darryl Fong, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada
- P.2351 Promotion of osteogenesis and biomineralization in mouse mesenchymal stromal cells by collagen nanofiber modified 3d printed beta- tcp scaffold
Xiaoling Fu, South China University of Technology, Guangzhou, P.R. China
- P.2353 Mechanical properties of hydroxyapatite hexagonal boron nitride composites
Merve Geggin, Material Science and Engineering, Anadolu University, Eskişehir, Turkey
- P.2355 Polycationic elastin-like recombinamer as a mucoadhesive device
Constancio Gonzalez Obeso, Fisica de la Materia Condensada, University of Valladolid, Valladolid, Spain
- P.2357 Chemically linked PEEK/HA composite - mechanical properties and in vitro cell response
Erik A B Hughes, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- P.2359 The in vitro cytocompatibility of chitosan-alginate-Bioglass® composite scaffolds
Andrew Hurt, University of Greenwich, Kent, United Kingdom
- P.2361 Self-assembled ECM-like physically cross-linked hydrogels based on nature-derived recombinant biomaterials
Arturo Ibáñez-Fonseca, University of Valladolid, Valladolid, Spain
- P.2363 Chitosan microspheres elaboration to growth factors release
Katia Jarquin, Depto. de Biología Celular y Tisular, Facultad de Medicina, Universidad Nacional Autónoma de México, Mexico City, Mexico
- P.2365 Surface modification of alpha-tricalcium phosphate with inositol phosphate for cement fabrication
Toshiisa Konishi, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan
- P.2367 Processing effects on the bioactivity of sol-gel-derived borate glasses
William C Lepry, Mining and Materials Engineering, McGill University, Montreal, QC, Canada
- P.2369 Bioglass promotes wound healing by affecting behaviors of endothelial cells, fibroblasts
Haiyan Li, School of Biomedical Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China
- P.2371 A biomimetic strategy for fabricating apatite hybrid materials and bioactive coatings
Jun Ma, Department of Biomedical Engineering, Huazhong University of Science and Technology, Wuhan, P.R. China
- P.2373 Initial adhesion behavior of osteoblast onto Zr-1Cr alloy
Satoshi Migita, Yamagata University, Yonezawa, Japan
- P.2375 Elastic poly(glycerol sebacate) / poly(lactic acid) copolymers for targeting soft tissue compliance
Brendan Nicholson, Research & Development, Secant Medical, Telford, PA, United States
- P.2377 Development of PLA based multiphase bioblends with improved properties
M.reza Nofar, Metallurgical and Materials Engineering, Istanbul Technical University, Istanbul, Turkey
- P.2379 Integrated molecular design of melt-processable Bioresorbable Engineering Nanocomposites for Healthcare (BENCh)
Andrew J Parsons, Faculty of Engineering, University of Nottingham, Nottingham, United Kingdom
- P.2381 Enhancing the biological functions of non-animal collagens
Yong Y Peng, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
- P.2383 Analysis of efficiency in demineralization process production of chitosan
Raid Icaro Rached Farias, Materials Engineering, Federal University of Campina Grande, Campina Grande-PB, Brazil
- P.2385 The effect of the addition of gallium on the structure of borate glass
Alireza Rahimnejad Yazdi, Department of Industrial and Mechanical Engineering, Ryerson University, Toronto, ON, Canada
- P.2387 Silk fibroin-spider silk-like protein biomaterials for preventing microbial infections
Rui Reis, University of Minho - 3B's research Group, University of Minho, Guimarães, Portugal
- P.2389 A novel biomaterial with controllable biodegradation for bone regeneration
Changshun Ruan, Center for Human Tissue and Organs Degeneration, Institute Biomedicine and Biotechnology, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, P.R. China
- P.2391 Porous low modulus beta-type Ti-Nb alloys for hard tissue implants
Romy Schmidt, Institute for Complex Materials, Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany
- P.2393 Temporal Immunomodulator Controlled Release from Composite Scaffold for the Induction of Tolerogenic Dendritic Cells
Sangeetha Srinivasan, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- P.2395 Synthesis of pure tricalcium silicate powder by the Pechini method and characterization of hydrated cement
Yanni Tan, State Key Laboratory of Powder Metallurgy, State Key Lab of Powder Metallurgy, Central South University, Chang Sha, P.R. China
- P.2397 A 3-dimensional biomimetic in-vitro bone model for testing small orthopaedic implants
Gifty Tetteh, Materials Science & Engineering, University of Sheffield, Sheffield, United Kingdom
- P.2399 Development of new single crystalline bone plate using an ISO certified biomedical Ti-15Mo-5Zr-3Al alloy
Mitsuharu Todai, Division of Materials and Manufacturing Science, Osaka University, Suita, Japan
- P.2401 Calcium phosphate ceramic mediated effect of macrophages on the migration and osteoblastic differentiation of mesenchymal stem cells
Jing Wang, National Engineering Research Center for Biomaterials, Sichuan University, China, Chengdu, P.R. China
- P.2403 In vitro evaluation of biodegradable magnesium alloys containing micro-alloying additions of strontium, with and without zinc
Junlan Wang, Materials science and engineering, Monash University, Melbourne, Australia

- P.2405 New insights into fretting corrosion products from modular total hip replacement revision
Qiong Wang, Materials Engineering, University of British Columbia, Vancouver, BC, Canada
-
- P.2407 Synthesis and characterization of Serial PLGA and PEG-grafted PLGA copolymers for microspheres drug delivery system
Xinyu Wang, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Biomedical Materials and Engineering Research Center of Hubei Province, Wuhan, Wuhan, P.R. China
-
- P.2409 A fibronectin mimicking motif enhances cell adhesive properties of spider silk
Mona Widhe, Biotechnology, Proteintechnology, Royal Institute of Technology, Stockholm, Sweden
-
- P.2411 Control over the In vitro spreading, cell fate and proliferation of myoblast Cells in multicomponent self-assembled peptide hydrogels
Richard Williams, School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University, Bundoora, Australia
-
- P.2413 Combination of pro-angiogenic and bone cell attracting coatings on titanium implants
Cornelia Wolf-Brandstetter, Max Bergmann Center of Biomaterials, TU Dresden, Institute of Materials Science, Max Bergmann Center of Biomaterials, Dresden, Germany
-
- P.2415 Structural characteristics and antibacterial property of bivalent ions doped hydroxyapatite whiskers
Hongquan Zhang, School of Materials Science and Engineering, Wuhan University of Technology, Wuhan, P.R. China
-
- P.2417 Calcium phosphate scaffolds with different macro-pores constructed vascularized natural bone-like grafts at non-osseous sites in vivo for bone defect repairing
Wei Zhi, Key Laboratory of Advanced Materials and Technology (MOE), School of Materials Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China

15:00 - 16:30

220bcd (P2)

Poster Session 2A Functional materials

- P.2419 Antimicrobial peptide immobilization of Elastin-like proteins for use as bioactive antimicrobial surface coatings
Saba Atefyekta, Chemistry and Chemical engineering, Chalmers University of Technology, Gothenburg, Sweden
-
- P.2421 Production of plasma polymer films with controlled composition and surface charge for selective cell adhesion
Sara Babaei, McGill University, Montreal, QC, Canada
-
- P.2423 ECM-mimicking surface coating of gelatin and acid hyaluronic derivatives for controlling the immune response
Julien Barthes, Fundamental research, PROTIP Medical SAS, Strasbourg, France
-
- P.2425 Development of water stable N-rich butadiene based plasma polymer films for endovascular coiling
Madhwanthi Buddhadasa, Department of Chemical Engineering, McGill University, Montreal, QC, Canada
-
- P.2427 Insights into the hydrolytic degradation of poly(1,3-glycerol carbonate)
Fei Chen, Department of Chemical Engineering, Queen's University, Kingston, ON, Canada
-
- P.2429 Efficient gene transfection to hepatocytes by a multifunctional poly(lactitol)-based gene transporter via cellular regulation
Chong-Su Cho, Agricultural Biotechnology, Seoul National University, Seoul, Korea
-
- P.2431 Assembly of versatile nanofibrous protein films for applications in water filtration, catalysis, bioelectronics and drug delivery
Noémie-Manuelle Dorval Courchesne, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States
-
- P.2433 A TiO₂ - polyurethane composite as an alternative ventricular catheter material: materials characterization
Davide Erbogasto, Biomedical Engineering, University of Strathclyde, Glasgow, United Kingdom
-
- P.2435 Nanotemplated and fibronectin based-polyelectrolytes films : different ways for bioactivation
Adeline Gand, Biomaterial for Health Group, ERRMECe, University of Cergy-Pontoise, Cergy-Pontoise, France
-
- P.2437 Photochemically crosslinked methacrylate / isocyanate-containing bone adhesive with degradable ceramic fillers
Uwe Gbureck, Department for Functional Materials in Medicine and Dentistry, University Hospital Würzburg, Würzburg, Germany
-
- P.2439 Use of calcium phosphate- silver nanoparticles in chitosan coatings on titanium and for drug delivery
Gillen G Gonzales, University of Memphis, Memphis, TN, United States
-
- P.2441 Beneficial effect on hemostatic function of blended chitosan/gelatin nanofiber mat with enhanced porosity using ultra-sonication
Bon Kang Gu, Laboratory of Tissue Engineering, Korea Institute of Radiological and Medical Sciences, Seoul, Korea

15:00 - 16:30

220bcd (P3)

Poster Session 2A**Tissue engineering and regenerative medicine**

- P.2443 Nano-ordered and direct analysis of molecular interactions in protein adsorption process on polymer brush surfaces
Yuuki Inoue, Department of Materials Engineering, The University of Tokyo, Tokyo, Japan
- P.2445 Microlens topography in conjunction with vascular endothelial growth factor induces endothelial transdifferentiation of human mesenchymal stem cells into vasculogenic progenitors.
Marek Kukumberg, Mechanobiology Institute, National University of Singapore, Singapore, Singapore
- P.2447 Hydrophilization of superparamagnetic Fe₃O₄/P(MMA-AA) composite nanoparticles and their rapid capture of circulating tumor cells
Shaohua Ma, National Engineering Research Center for Biomaterials, Chengdu, P.R. China
- P.2449 Construction and characterization of protein-encapsulated electrospun fibermats prepared from a silica/poly(γ - glutamate) hybrid
Toshihisa Mizuno, Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Japan
- P.2451 Coiled-coil interactions: a versatile bioaffinity system for the oriented immobilization and tunable release of biomolecules from biomaterials
Frederic Murschel, Institute of Biomedical Engineering, Polytechnique Montréal, Montréal, QC, Canada
- P.2453 Gelatin-alginate surgical sealant loaded with hemostatic agents
Oded Pinkas, Department of Materials Science and Engineering, Faculty of Engineering, Tel-Aviv University, Petah Tikva, Israel
- P.2455 Zwitterionic polymers and nanogels as new and potent class of protein aggregation inhibitors
Robin Rajan, School of Materials Science, Japan Advanced Institute of Science and Technology, Nomi, Japan
- P.2457 Chemical modification of Cladophora nanocellulose to provide a non-toxic material with anticoagulant properties
Igor Rocha, Nanotechnology and Functional Materials, Uppsala University, Uppsala, Sweden
- P.2459 Sulfated glycosaminoglycan derivatives affect the bioactivity of angiogenic growth factors
Sandra Rother, Technische Universität Dresden, Dresden, Germany
- P.2461 Design of β -hairpin peptides with potent antimicrobial activity and target specificity against *Enterococcus faecalis*
Anshan Shan, Northeast Agricultural University, Institute of Animal Nutrition, Harbin, P.R. China
- P.2463 Controlled photo-immobilization of proteins on phospholipid polymer surfaces
Masako Tanaka, Graduate School of Science and Engineering, Kansai University, Osaka, Japan
- P.2465 Interaction of polypyrrole nanoparticles synthesized by plasma with cell lines with potential biomedical applications
Omar Uribe, Engineering and Basic Science, Universidad Autonoma Metropolitana, Mexico City, Mexico
- P.2467 Potentially functional polypeptides for modification of biomaterials
Jiannan Wang, Soochow University, Suzhou, P.R. China
- P.2501 Chitosan/Bioglass composite films by dip-coating method
Aline Evangelista Aguiar, Physical-chemistry, Chemistry Institute/Unicamp, Campinas/SP, Brazil
- P.2503 Optimization and characterization of bacterial cellulose as a high strength biomaterial for tissue engineering in load bearing applications
Daniel S Alt, Case Western Reserve University, Cleveland, OH, United States
- P.2505 Three-dimensional cell culture using an oxygen permeable culture chip (Oxy chip)
Takahisa Anada, Division of Craniofacial Function Engineering, Graduate School of Dentistry, Tohoku University, Sendai, Japan
- P.2507 Approaching the compressive modulus of articular cartilage through naturally derived cartilage matrix
Emily C Beck, Surgery, University of Kansas, Lawrence, KS, United States
- P.2509 Development of 3D microvascularized gelatin hydrogel for skin tissue engineering
Leon M Bellan, Vanderbilt University, Nashville, TN, United States
- P.2511 Porous spheres of natural polymers: study of mechanical strength and cytotoxicity
Marisa M Beppu, School of Chemical Engineering, University of Campinas, Campinas, Brazil
- P.2513 High throughput platform for rapid evaluation of cell and tissue response to 3D composite materials
Christopher P Bertucci, Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, United States
- P.2515 Surface patterned dermal-epidermal co-culture hydrogels to mimic the hair follicle niche
Tobin E Brown, Chemical Engineering, University of Colorado, Boulder, CO, United States
- P.2517 Development of hybrid cell encapsulated chitosan/3D PCL scaffolds for bone repair
Giuseppe Cama, Polymer Chemistry & Biomaterials Group, University of Ghent, Ghent, Belgium
- P.2519 Viability and osteo/odontogenic differentiation of dental pulp stem cells in crosslinked chitosan-gelatin scaffolds
Maria Chatzinikolaïdou, Materials Science and Technology, University of Crete, Heraklio, Greece
- P.2521 The tissue-engineered human cornea as a model to study the contribution of the integrin-mediated signal transduction pathways activated during corneal wound healing
Camille Couture, CUO-recherche, CHU de Québec, Québec, QC, Canada
- P.2523 Evaluation of an injectable thermoresponsive hyaluronan hydrogel in a rabbit osteochondral defect model
Matteo D'Este, Musculoskeletal Regeneration Program, AO Research Institute Davos, Davos Platz, Switzerland

- P.2525 In situ synthesis of hydroxyapatite for the production of natural rubber/poly(lactide-co-glicolide)/hydroxyapatite composites
Teo A Dick, Department of Materials science and engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil
- P.2527 In vivo biological performance of Biosilicate®/PLGA composites in tibial bone repair
Kelly Rossetti Fernandes, Department of Biosciences, Federal University of São Paulo (UNIFESP), Santos, Brazil
- P.2529 The self-assembly approach of tissue engineering for in vitro production of human tissue- and organ-specific constructs
Julie Fradette, Surgery, Laval University, LOEX, Quebec, QC, Canada
- P.2531 A 3D biomaterial system to study breast to brain metastasis
Sualyneth Galarza, Chemical Engineering, University of Massachusetts, Amherst, MA, United States
- P.2533 Heparin-functionalized, photocrosslinked carboxymethyl-cellulose hydrogels for intervertebral disc tissue engineering
Nada A Haq-Siddiqi, Biomedical Engineering, The City College of New York, Brooklyn, NY, United States
- P.2535 Porous hydrogel of wool hair keratin as a substrate for cell culture
Masayuki Hara, Department of Biological Science, Graduate School of Science, Osaka Prefecture University, Sakai, Japan
- P.2537 Atmospheric Plasma Modified Electrospun Poly(L-Lactide-Co D, L-Lactide) Matrices for the Treatment of Corneal Scarring
Katie-Jo Harwood, Ulster University, Newtownabbey, United Kingdom
- P.2539 Collagen based scaffolds for meniscus tissue engineering: in vivo application
Vasif N Hasirci, Biological Sciences, Middle East Technical University, Ankara, Turkey
- P.2541 Development of a decellularized scaffold of pig skeletal muscle
Miguel A Herrera Enríquez, Cell and Tissue Biology, Medicine School, Universidad Nacional Autónoma de México, México, Mexico
- P.2543 Multifunctional biomimetic materials with structural complexity
Amber M Hilderbrand, Chemical and Biomolecular Engineering, University of Delaware, Newark, DE, United States
- P.2545 Design and evaluation of barnacles beta-sheet peptide hydrogel for 3D scaffold
Yoshiaki Hirano, Department of Chemistry and Materials Engineering, Kansai University, Suita, Japan
- P.2547 Blood-compatible polymers for hepatocyte adhesive culture with the maintenance of hepatic functions toward bioartificial liver support development
Takashi Hoshiba, Yamagata University, Yonezawa, Japan
- P.2549 Highly oriented PLA fiber reinforced tubular scaffold with shape recovery effect for cell guide applications
Kazi Md Zakir Hossain, Advance Materials Research Group, University of Nottingham, Nottingham, United Kingdom
- P.2551 Effect of hydrogel coating of smooth muscle cells orientated on a biomaterial surface: A protective outer layer for a cellularized vascular prosthesis with surface guidance.
Scott A Irvine, School of Materials Science and Engineering, Nanyang technological university, Singapore, Singapore
- P.2553 Tunable elastomeric matrices - a model system for skeletal muscle characterization
Roshan James, Institute for Regenerative Engineering, University of Connecticut Health Center, Farmington, CT, United States
- P.2555 Extracellular matrix hydrogels for treatment of ulcerative colitis
Timothy J Keane Jr, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- P.2557 Cell incorporated methacrylated gelatin (GelMA) hydrogels for corneal stroma tissue engineering
Cemile Kilic Bektas, Biotechnology Department, Middle East Technical University, Ankara, Turkey
- P.2559 Effect of amphiphilic PEGylated bilirubin nanoparticle on pancreatic islet transplantation
Min Jun Kim, Bioengineering, Hanyang University, Seoul, Korea
- P.2561 Title : Effect of 3% 4-hexylresorcinol silk vascular patch on healing of injured carotid artery in a rat model
Min Keun Kim Jr, Department of Oral and maxillofacial surgery, College of Dentistry, Gangneung Wonju National University, Gangneung, Korea
- P.2563 A perfusion bioreactor combined with mechanical stimulation generates efficiently tissue engineered bone equivalents
Claudia Kleinhans, Department of Orthopedics and Orthopedic Surgery, Medical University Graz, Graz, Austria N/A
- P.2565 Ethyl-3, 4-dihydroxybenzoate as a novel dual-action therapeutic agent by regulating both bone formation and resorption
Byeong-Ju Kwon, Department of Medical Engineering, Yonsei university college of medicine, Seoul, Korea
- P.2567 Water removal from dense tubular collagen gel-based scaffolds enhances its mechanical properties
Audrey Lainé, Department of Min-Met-Material Engineering, Laval University, Quebec, QC, Canada
- P.2569 Preparation of biodegradable and biocompatible emulsion templated scaffolds for tissue engineering by thiol-acrylate polymerization of polycaprolactone macromers
Caitlin R Langford, Materials Science and Engineering, Monash University, Clayton, Australia
- P.2571 Study of proteoglycans in corneal stroma reconstructed by the self-assembly method
Gaëtan Le-Bel, LOEX / CUO-Recherche, Québec, QC, Canada
- P.2573 Two novel collagen based dura repair membranes: solutions for the multifaceted needs in duraplasty part ii: in vivo rabbit duraplasty studies
Natsuyo S Lee, Research and Development, Collagen Matrix, Inc., Oakland, NJ, United States
- P.2575 Towards biofabrication of a viable modular auricular cartilage implant using a polymer fiber-reinforced hydrogel
Riccardo Levato, Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands

- P.2577 Bone and vascular cells in cultures on polymeric films modified with carbon films
Jana Liskova, Department of Biomaterials and Tissue Engineering, Institute of Physiology CAS, Prague, Czech Republic
- P.2579 Enhancing hepatocyte function using liver extracellular matrix derived from various species
Abigail E Loneker, McGowan Institute for Regenerative Medicine, Pittsburgh, PA, United States
- P.2581 Chitosan-hydroxyapatite composite hydrogels for bone regeneration
Marco Lopez, Controlled Drug Delivery Systems and Biomaterials, University of Lille 2, Lille, France
- P.2583 Poly (lactic-co-glycolic acid)/Polyisoprene fibres applied as scaffolds for soft tissue engineering
Luis Alberto Loureiro Dos Santos, Engineering Materials Department, Federal University of Rio Grande do sul, Porto Alegre, Brazil
- P.2585 Hybrid hydrogel for tissue engineering: A new matrix for bone regeneration
Mathieu Maisani, LBB CHUQ & BioTis INSERM, Laval University & University of Bordeaux, Quebec, QC, Canada
- P.2587 Effect of mineral organization on mechanical properties of constructs composed of fused and actively mineralized micromodules
Howard WT Matthew, Dept. of Chemical Engineering & Materials Science, Wayne State University, Detroit, MI, United States
- P.2589 Patterned deposited nanofibers/microparticles in electrospinning technique to fabricate 3D highly porous scaffold with dual pore size for bone tissue engineering application
Hamid Mirzadeh, Amirkabir University of Technology, Tehran, Iran (Islamic Republic of)
- P.2591 Bioinspired hollow fiber membrane bioreactor using human liver microtissue spheroids
Sabrina Morelli, National Research Council of Italy, Institute on Membrane Technology, Rende, Italy
- P.2593 The intercellular communication in vascular smooth muscle: regulation of the Connexin 43 expression by amplitude and frequency of dynamic stimulation
Jana Musilkova, Department of Biomaterials and Tissue Engineering, Institute of Physiology CAS, Prague, Czech Republic
- P.2595 Microfluidic co-culture system model to study the interplay between sensory neurons and mesenchymal stem cells: new clues towards osteogenesis
Hugo Oliveira, Institut National de la Santé et de la Recherche Medicale (INSERM) U1026 Biotis, Bordeaux, France
- P.2597 Chitosan films with varying degrees of acetylation for application in peripheral nerve regeneration
J.M. Oliveira, Department of Polymer Engineering, 3B's research Group, Guimarães, Portugal
- P.2599 Effect of burst and/or sustained release of rhBMP-2 on bone formation in vivo
Sean AF Peel, Induce Biologics Inc., Toronto, ON, Canada
- P.2601 A novel biodegradable injectable triphasic bone substitute based on β -TCP, methylcellulose and hyaluronic acid enhances bone regeneration: An in vivo and translational study
Fabian Raimund Peters, Research and Development, Curasan AG, Frankfurt am Main, Germany
- P.2603 Tissue-engineering of a choroidal substitute with pseudo-vascularization.
Stephanie Proulx, Ophthalmology, Université Laval, Québec, QC, Canada
- P.2605 TGF- β 3 release from nanofibers regulates stem cell-mediated interface tissue engineering
Dovina Qu, Biomedical Engineering, Columbia University, New York, NY, United States
- P.2607 Effect of strontium substitution on the morphology of calcium phosphates crystals and polymorphism of the hexagonal hydroxyapatite (P63/m) / monoclinic (P21/c)
Jose da Silva Rabelo Neto, Condensed Matter Physics, Materials Engineering, Joinville, Brazil
- P.2609 Microsphere-pile scaffold for in vitro vascularized bone tissue construction
Xuetao Shi, Materials, National Engineering Research Center for Tissue Restoration and Reconstruction, South China University of Technology, Guangzhou, P.R. China
- P.2611 Bio-inspired polymer surfaces for reverse transfection of siRNA to enhance osteogenic differentiation and bone formation of human adipose-derived stem cells
Jisoo Shin, Yonsei University, Seoul, Korea
- P.2613 Graphene oxide-incorporated PLGA/RGD peptide nanofiber matrices for enhanced neuronal differentiation of mouse hippocampal (HT-22) cells
Yong Cheol Shin, Department of Cogno-Mechatronics Engineering, Pusan National University, Busan, Korea
- P.2615 Ex vivo engineered immune organoids for controlled germinal center reactions
Ankur Singh, Mechanical Engineering, Cornell University, Ithaca, United States
- P.2617 SlipSkin™ based hollow fiber membranes for protein-bound toxin removal
Dimitrios Stamatialis, Biomaterials Science and technology, University of Twente, Enschede, Netherlands N/A
- P.2619 Joint shear load determination using sensate scaffolds that support cartilage regeneration in the knee
John A Szivek, Orthopaedic Surgery, University of Arizona, Tucson, AZ, United States
- P.2621 Tissue-Engineered Skeletal Muscle with Collagen Sponge Scaffold Having contractile properties
Shunya Takagi, Department of Biomedical Engineering, Japan/Osaka Institute of Technology, Osaka, Japan
- P.2623 Atomic layer deposited TiO₂ protects highly porous ceramic bone scaffolds from grain boundary corrosion
Hanna Tiainen, University of Oslo, Oslo, Norway
- P.2625 Endometrial-engineered Cell Sheets for Resumption of Fertility
How Tseng, Department of Biochemistry and Molecular Cell Biology, Taipei Medical University, Taipei, Taiwan

- P.2627 Biomimetic magnetic scaffolds based on biopolymers and calcium phosphates for bone regeneration and repair
Liliana Verestiuc, Faculty of Medical Bioengineering, Grigore T. Popa University of Medicine and Pharmacy, Iasi, Romania
- P.2629 Electrospun shape memory scaffolds for bone tissue engineering
Min Wang, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- P.2631 Design of sugar-responsive hydrogels as a sacrificial template to fabricate vascularized collagen gels in vitro
Masaya Yamamoto, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan
- P.2633 Availability of conditioned medium from human autologous bone-derived mesenchymal cells. -Experimental study-
Yasuharu Yamazaki, Department of Plastic & Aesthetic Surgery, School of Medicine, Kitasato University, Kanagawa, Japan
- P.2635 Coaxial electrospay for cell encapsulation and delivery in cell-based tissue engineering
Yu Zhou, The University of Hong Kong, Hong Kong, Hong Kong
- P.2637 Mechanical reinforcement of hydrogels with highly porous three-dimensional scaffolds made of micro-size melt electrospun fibres
Elena M. De-Juan-Pardo
- P.2639 Injectable hyaluronic acid bionano hydrogels: from biomaterial development to biological performance outcomes
Rui MA Domingues
- P.2685 A Novel Ceramic Coating for Reduced Metal Ion Release in Metal-on-Metal Hip Surgery
Melanie J Coathup, Institute of Orthopaedics and Musculoskeletal Science, Division of Surgery and Interventional Science, University College London, Stanmore, United Kingdom
- P.2687 Characterization and biocompatibility of a fibrous glassy scaffold
Paulo Roberto Gabbai-Armelin Sr, Department of Biomaterials, Federal University of Sao Paulo (UNIFESP), Santos, Brazil
- P.2689 Prevention of biofilm formation in platelet storage bags with a biocompatible polymer coating
Narges Hadjesfandiari, Chemistry, University of British Columbia, Vancouver, BC, Canada
- P.2691 Biomechanical and histopathology evaluation on osseointegration ability of two types zirconia in vivo
Jianmin Han Sr, Dental Materials, Peking University School and Hospital of Stomatology, Beijing, P.R. China
- P.2693 Electrochemistry measurements during hip wear simulation for high and low femoral head assembly
Robert S Hastings, Research, DePuy Synthes Joint Reconstruction, Warsaw, IN, United States
- P.2695 Elaboration of a cellularizable chitosan based hydrogel and pre-requisites for implantation
Didier Letourneur, Cardiovascular Bioengineering, Laboratory for Vascular Translational Sciences, Paris,
- P.2697 Evaluating activities of novel antimicrobial peptides against *Staphylococcus aureus* biofilms
Zhenghao Li, Allvivo Vascular, Inc., Lake Forest, CA, United States
- P.2699 Studies of surface modification of titanium with hydroxyl and phosphonic acid containing copolymers: synthesis, characterization, and application in resisting platelet adhesion
Jui-Che Lin, Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan
- P.2701 Diabetes, fibrinogen and host response: exploring relationships using a 3D in vitro model
Katharina Maniura, Biointerfaces, Empa Materials and Science Technology, St. Gallen, Switzerland
- P.2703 Interactions at biomaterial interfaces
Bruce Milthorpe, Faculty of Science, University of Technology Sydney, Broadway, Australia
- P.2705 Development of protein markers for evaluating the blood compatibility of biomaterials: Validation of identified markers by comprehensive multivariate proteomic analysis for plasma proteins adsorbed on the surface of metal materials for stents
Yuki Morishita, Division of Medical Devices, National Institute of Health Science, Setagaya-ku, Japan
- P.2707 Exudation of antioxidants to the surface of medical devices: Impact on biocompatibility in the case of polyurethane used in implantable catheters
Micheal Nouman, Paris 11 University, Paris, France
- P.2709 In vivo evaluation of the role of carbonate ion in hydroxyapatite for bone remodeling
Kosuke Nozaki, Material Biofunctions, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan

15:00 - 16:30

220bcd (P4)

Poster Session 2A**Biomaterials and host response**

- P.2671 The corrosion resistance of Ti-Zr binary alloy with compositional change
Teisuke Akimoto, Removable Partial Prosthodontics, Tokyo Medical and Dental University, Tokyo, Japan
- P.2673 High resolution 3D T2-like MRI for longitudinal biomaterial follow-up study on small animal models
Joëlle Amedee, University of Bordeaux, Inserm, Bordeaux, France
- P.2675 'Macrophages in a state of flux': The role of CD68-positive macrophages in the biocompatibility of biomaterials
Volker Schmitt, University Regensburg, Regensburg, Germany
- P.2677 Electron-beam surface modification of bioresorbable polymers for enhanced release of silver nano-particles: an anti-bacterial strategy
Fraser J Buchanan, School of Mechanical and Aerospace Engineering, Queen's University, Belfast, United Kingdom
- P.2679 Bone de novo deposition in ASC protein-dependent
Monica Calasans-Maia, Oral Surgery Department, Fluminense Federal University, Rio de Janeiro, Brazil
- P.2681 Effects of magnitude and duration of cathodic voltage-controlled electrical stimulation of titanium for prevention of biofilm infections
Mary K Canty, Biomedical Engineering, State University of New York at Buffalo, Amherst, NY, United States
- P.2683 Strategies for controlled release of biocidal silver ions from plasma-deposited antibacterial coatings
Maxime Cloutier, Laboratoire de Biomateriaux et Bioingenierie, Universite Laval, Québec, QC, Canada

- P.2711 Colloidal crystal based plasma polymer patterning to control *Pseudomonas aeruginosa* attachment to surfaces
Hitesh Pingle, Faculty of Science, Engineering and Technology School of Science Department of Chemistry and Biotechnology, Swinburne University Of Technology, Melbourne, Australia
- P.2713 Effect of superhydrophobicity/superhydrophilicity of titanium surface on hemocompatibility
Ketul C Popat, Mechanical Engineering, Colorado State University, Fort Collins, CO, United States
- P.2715 Organo-selenium polymerized into a polyurethane catheter tubing inhibits biofilm formation of both gram-negative and gram-positive bacteria
Ted W Reid, Director of Biotechnology, Texas Tech University Health Sciences Center, Lubbock, TX, United States
- P.2717 Biological evaluation of biomaterials, alkaloids from *Pilocarpus microphyllus*, in human neutrophils: toxicity and anti-inflammatory activity
Talita M Rocha, Department of the Physiology and Pharmacology, University Federal of the Ceará, Fortaleza, Brazil
- P.2719 Design of fluoride-rich restorative dental materials to prevent human oral infections
Mahmoud Rouabhia, Faculté de médecine dentaire, Université Laval, Quebec, QC, Canada
- P.2721 In vivo evaluation of the local inflammatory response after intramuscular implantation of Ti6Al4V plates with anti-adhesive plasma-fluorocarbon-polymer films in rats
Michael Schlosser, Department of Medical Biochemistry and Molecular Biology, University Medical Center Greifswald, Karlsburg, Germany
- P.2723 Cardiovascular medical device evaluation of particulate following simulated use testing
Jeffrey L Schwartz, W. L. Gore & Associates, Flagstaff, AZ, United States
- P.2725 Plasma proteins moderate FXII contact activation
Christopher A Siedlecki, Surgery and Bioengineering, Penn State College of Medicine, Hershey, PA, United States
- P.2727 Use of discovery proteomics as a biocompatibility screening tool: study of silver nanoparticle cytotoxicity
Eric M Sussman, Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, MD, United States
- P.2729 Poly(diol fumarates); a new class of tunable antimicrobial polymers
Alexander M Tatara, Bioengineering, Rice University, Houston, TX, United States
- P.2731 Preparation of heparin-immobilized liquid crystalline hydroxypropyl cellulose ester and their blood compatibility
Mei Tu, Materials Science and Engineering, Jinan University, Guangzhou, P.R. China
- P.2733 Hydroxyapatite, polycaprolactone and alendronate in bone regeneration in the olecranon of rabbits
Fabricio L Valente, Departamento de Veterinaria, Universidade Federal de Vicosa, Vicosa, Brazil
- P.2735 Bacterial inactivation mechanism of titania nanotubes modified with gold nanoparticles
Guomin Wang, City University of Hong Kong, Hong Kong, Hong Kong
- P.2737 The effects of cells on biocorrosion of Mg alloys
Akiko Yamamoto, Biomaterials Group, Biomaterials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan
- P.2739 Polymers to treat tissue hypoperfusion: possible mechanisms
Oguzhan Yildiz, Medical Pharmacology, Gulhane Faculty of Medicine, Ankara, Turkey
- P.2741 Towards infection resistant surfaces: polymer brush chemistry and peptide structure modulate the potency of antimicrobial peptides
Kai Yu, Department of Pathology and Lab Medicine, University of British Columbia, Vancouver, BC, Canada
- P.2743 Haemocompatibility of nanoporous activated carbon adsorbents designed for blood detoxification
Yishan Zheng, School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, United Kingdom
- P.2745 A comparative study of in vitro biocompatibility of Zn and AZ31 for cardiovascular stent application
Donghui Zhu, Bioengineering, North Carolina A&T State University, Greensboro, NC, United States

15:00 - 16:30

220bcd (P4)

Poster Session 2A Innovation in fabrication

- P.2747 Ultrahigh-throughput generation and characterization of cellular aggregates in laser-ablated microwells of poly(dimethylsiloxane)
Jacob L Albritton, Bioengineering, Rice University, Houston, TX, United States
- P.2749 Direct metal laser sintering (DMLS) for application in manufacture using prostheses of mandibular customized condyles coated with sub microstructured zirconia
Fabiano Costa Almeida, Faculty of Chemical Engineering, Institutos Nacionais de Ciência e Tecnologia, BioFabris, Campinas, Brazil
- P.2751 Mass production of toroidal hydrogel microparticles and their bioapplications
Duo An, Cornell University, Ithaca, NY, United States
- P.2753 3D microfabrication for biomedical applications
Hossein Bahmaee, Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom
- P.2755 Free standing collagen films prepared by electrophoretic deposition
David J Barrett, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom
- P.2757 Structural and mechanical characterizations of nano calcium phosphate coatings prepared by induction suspension plasma spray (rf-SPS)
Ghislaine Bertrand, Université Paul Sabatier, CIRIMAT, Toulouse, France
- P.2759 Thermal and nano-mechanical characterisation of polyurethane scaffolds: comparison of solvent cast, melt processed and electrospun forms
Milovan Cardona, University of Strathclyde, Glasgow, United Kingdom

- P.2761 Anti-infective coatings for titanium implants by alternating current electrophoretic deposition
Annabel Braem, Department of Materials Engineering, KU Leuven, Department of Materials Engineering, Leuven, Belgium
- P.2763 Bioprinting as a tool to evaluate interactions of cancerous and noncancerous cells
Karen Burg, Small Animal Medicine & Surgery, University of Georgia, Athens, GA, United States
- P.2765 Enhancement of Biocompatibility of Crystalline Silicon by Nanosecond Laser Pulses for Bionic Devices Fabrication
Candace L Colpitts, Master of Science in Mechanical Engineering, University of New Brunswick, Fredericton, NB, Canada
- P.2767 Towards a standardized nomenclature for resorbable tissue engineering photocrosslink-based 3D printing technologies
David Dean, Plastic Surgery, The Ohio State University, Columbus, OH, United States
- P.2769 User-programmable vasculature with 3D micron-scale resolution through hydrogel photodegradation
Cole A Deforest, Chemical Engineering, University of Washington, Seattle, WA, United States
- P.2771 Conventional and novel methods in laser microcutting of biodegradable Mg alloys
Ali Gökhan Demir, Department of Mechanical Engineering, Politecnico di Milano, Milan, Italy
- P.2773 Profex and BGMN: Open-source software for phase analysis by X-ray diffraction
Nicola Doebelin, Skeletal Substitutes Group, RMS Foundation, Bettlach, Switzerland
- P.2775 Implantable diamond capsules for electro stimulation and recording
Kumaravelu Ganesan, School of Physics, University of Melbourne, Parkville, Australia
- P.2777 Structuring of cellulose nanocrystal composite films on shape memory polymers
Urooj Gill, Chemistry & Chemical Biology, McMaster University, Mississauga, ON, Canada
- P.2779 Spatially Controlled Photo-Patterning of Multi-Material Bioactive Hydrogels
Bagrat Grigoryan, Rice University, Houston, TX, United States
- P.2781 Laser Photofabrication of Gelatin Hydrogel Constructs with High Degree of Functionalization
Peter Gruber, Institut für Material Science and Technology, Vienna University of Technology, Vienna, Austria
- P.2783 Low-cost laser-induced incandescence for microfabrication in transparent polymers: progress and applications to biotechnology
Mathieu Hautefeuille, Facultad de Ciencias, Universidad Nacional Autónoma de México, México, México
- P.2785 Degradation study of polylactic acid textile structure under commercial fabrication conditions
Ting He, College of Textiles, North Carolina State University, Raleigh, NC, United States
- P.2787 3D printing hydrogel and elastomer scaffolds in a fugitive support
Thomas Hinton, Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- P.2789 A novel method for comprehensive analysis of collagen biomaterials
Lynn LH Huang, Institutes of Biotechnology & Clinical Medicine, National Cheng Kung University, Tainan, Taiwan
- P.2791 Preparation, characterization and cytotoxicity studies of a novel bioconjugate hyaluronan and α -linolenic acid
Gloria Huerta-Angeles, Nano-carrier development group, Contipro-Pharma, Dolní Dobruška, Czech Republic
- P.2793 Hybrids novel 3D structures with potential use in biomedical and surgical applications
Rodrigo Alvarenga Rezende
- P.2795 Bladder cancer-on-a-chip for analysis of tumor transition mechanism
Hojeong Jeon, Center for Biomaterials, Korea Institute of Science and Technology, Seoul, Korea
- P.2797 Open-source Selective Laser Sintering (OpenSLS) of nylon and biocompatible polycaprolactone
Ian S Kinstlinger, Department of Bioengineering, Rice University, Houston, TX, United States
- P.2799 Modification and evaluation of periodic nanostructures on titanium generated by femtosecond laser for improving osseointegration
Bryan EJ Lee, School of Biomedical Engineering, McMaster University, Hamilton, ON, Canada
- P.2801 Fabrication and cellular biocompatibility of porous spherical calcium phosphate nanoceramic granules
Xiangfeng Li, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- P.2803 Innovative manufacture of hard tissue scaffold using tailored bioresorbable composite filaments for promoting bone regeneration
Hannah E Little, Mechanical and Aerospace Engineering, Queens University Belfast, Belfast, United Kingdom
- P.2805 Electrospun biomimetic scaffold for tympanic membrane repair and its acoustic properties
Jian Liu, Department of Chemical and Biochemical Engineering, Western University, London, ON, Canada
- P.2807 3D printing of polymeric microspheres for tissue engineering scaffolds
Stefan Lohfeld, Biomedical Engineering, National University of Ireland, Galway, Galway, Ireland
- P.2809 Directional Foaming of scaffolds by integration of 3D Printing and Supercritical CO₂ Foaming
Matteo GM Marascio, Laboratoire de Technologie des Composites et Polymères, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
- P.2811 Influence of chitosan origin on properties of porous alginate-chitosan membranes intended for skin tissue engineering
Angela M Moraes, School of Chemical Engineering/Department of Engineering of Materials and of Bioprocesses, University of Campinas (UNICAMP), Campinas, Brazil
- P.2813 Utilising additive layer manufactured components to improve osteointegration of endoprostheses: A FEA and histological study
Aadil S Mumith, John Scales Centre for Biomedical Engineering, Institute of Orthopaedics and Musculoskeletal Science, Stanmore, United Kingdom

- P.2815 Enhancing osseointegration by site-specific laser modification of titanium implants: comparative and correlative analyses of different parameters of bone-implant integration
Omar Omar, Department of Biomaterials, Institute of Clinical Sciences, Sahlgrenska Academy, The University of Gothenburg, Gothenburg, Sweden
- P.2817 Additive Manufactured, Biocompatible Hydrogels based on Hyaluronic Acid
Aleksandr Ovsianikov, Institute of Materials Science and Technology (E308), Technische Universität Wien, Vienna, Austria
- P.2819 Organic Electronics for in vitro toxicology
Roison Owens, Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, Gardanne, France
- P.2821 Mapping convective and diffusive transport in 3D printed vascularized tissues
Samantha J Paulsen, Bioengineering, Rice University, Houston, TX, United States
- P.2823 Manufacture and characterization of porous Poly(lactic acid) scaffold
Natacha R Rodrigues, School of Mechanical and Systems Engineering, Newcastle University, Newcastle City Center, United Kingdom
- P.2825 Cell surface coating with hydrogel sheath through on-cell surface enzymatic cross-linking
Shinji Sakai, Materials Engineering Science, Osaka University, Toyonaka, Japan
- P.2827 Coaxial electrospinning of poly(N-vinylcaprolactam) for drug delivery applications
Marwa S Sta, Mechanical Engineering, École de technologie supérieure (ETS), Montreal, QC, Canada
- P.2829 Fabrication of poly-(ε-caprolactone):poly-(octanoic acid 2-thiophen-3-yl-ethyl ester) fibers by electrospinning for cell proliferation
Loreto M Valenzuela Roediger, Chemical and Bioprocessing Engineering, Pontificia Universidad Católica de Chile, Santiago, Chile
- P.2831 Two-photon polymerization of gelatin hydrogels: carboxylic acid modification as the key to success
Jasper M K Van Hoorick, Department of Organic and Macromolecular Chemistry, Polymer Chemistry & Biomaterials Research Group, Ghent University, Ghent, Belgium
- P.2833 Layer-by-layer plasma polymerization for preparing biofunctionalized materials
Meng-Jiy Wang, Department of Chemical Engineering, National Taiwan University of Science & Technology, Taipei, Taiwan
- P.2835 Open-porous biodegradable magnesium scaffolds produced by selective laser melting for individualized bone replacement.
Frank Witte, Julius Wolff Institute and Berlin-brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany
- P.2837 Microstructure and mechanical properties of Ti-X alloys fabricated by selective laser melting process for new biomaterial devices
Suyalatu Xxx, Division of Materials and Manufacturing Science, Osaka University, Osaka, Japan

- P.2839 Highly Porous Poly(3,4-ethylenedioxythiophene) Prepared by Vapor Phase Polymerization for Biomedical Applications
M Naveed Yasin, Dept of Ophthalmology, University of Auckland, Auckland, New Zealand

15:00 - 16:30

220bcd (P5)

Poster Session 2A Surfaces and interfaces

- P.2851 A biomimetic hydroxyapatite coating on polyetheretherketone
Sara Ajami, Institute of Orthopaedics, University College London, London, United Kingdom
- P.2853 Macro-porous PEDOT for neuronal interfacing
Zaid Aqrave, University of Auckland, Auckland, New Zealand
- P.2855 Multifunctional ECO-mediated delivery of miR-200b for metastatic breast cancer therapy
Nadia R Ayat, Biomedical Engineering, Case Western Reserve University, Cleveland, OH, United States
- P.2857 New Can surface roughness induce osteoblasts differentiation independently of the type of material? Comparison between metals, ceramic and polymers.
Cecilia Carlota Carlota Barrera Ortega, Biomaterials, Material Research Institute UNAM, Mexico, Mexico
- P.2859 Nanopillar modified neuroelectrodes through block copolymer self-assembly
Manus Biggs, NUI Galway, Galway, Ireland
- P.2861 Surface characterization of structural and stereo isomeric amino acids using sorption techniques and Raman spectroscopy
Daniel J Burnett, Surface Measurement Systems, Ltd., Allentown, PA, United States
- P.2863 Prevent biofilm formation using TiO₂ nanotubes on the Ti-30Ta alloy for biomedical application. abstract created on Wednesday September 30, 2015
Patricia Capellato, Department of Mechanical Engineering, Unicamp, Unicamp, Brazil
- P.2865 Evaluation of osteogenic markers in the differentiation of murine preosteoblasts during the interaction with polyurethane/nanohydroxyapatite biomaterials
Georgina G Carbajal-De La Torre, BioEngineering, Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Mexico
- P.2867 Effect of anodic surface film of titanium with different structures on the in vivo and in vitro performance
Silvia M Ceré, Department of Electrochemistry and Corrosion, INTEMA, University of Mar del Plata, CONICET, Mar del Plata, Argentina
- P.2869 Electrospayed calcium phosphate nano-carriers as therapeutic agents
Yogeshwar Chakrapani, Indian Institute of Technology Madras, Chennai, India
- P.2871 A Newer Approach to Anodization on Dental Implants
Pankaj Chauhan, Mechanical Engineering, Indian Institute of Technology Delhi, India, New Delhi, India

- P.2873 Biomimetic fibronectin/mineral and osteogenic growth peptide/mineral composites synthesized on calcium phosphate thin film
Cen Chen, Zhejiang Sci-Tech University, Hangzhou, P.R. China
- P.2875 Surface modification of spherical gold nanoparticle with novel oligomeric deoxycholic acid to enhance the gastrointestinal absorption
Jeong Uk Choi, College of Pharmacy, Seoul National University, Seoul, Korea
- P.2877 Covalent immobilization of a sulfated polysaccharide via GraftFast[®] technology on a surface acoustic wave (SAW) sensor: toward a tool to measure interactions with vascular biomolecules
Lucas LC Chollet, Laboratory for Vascular Translational Science (LVTS), Villetaneuse, France
- P.2879 Flexible and highly stable organic electrochemical transistors for bioelectronics applications
Fabio Cicoira, Chemical Engineering, Polytechnique Montréal, Montréal, QC, Canada
- P.2881 Design and synthesis of hyaluronan based glycopolymers for self-assembly with hyaluronan binding peptides
Dominic W Collis, School of Engineering, Queen Mary, University of London, Slough, United Kingdom
- P.2883 Feasibility of molecular imaging with spectral CT using a photon-counting detector and nanoparticle imaging probes
Tyler E Curtis, Aerospace and Mechanical Engineering - Bioengineering, University of Notre Dame, Notre Dame, IN, United States
- P.2885 Structural and mechanical characterization of Cr-Co alloy after oxygen plasma immersion ion implantation
Letícia M De Andrade, University Center of FEI, Sao Bernardo do Campo, Brazil
- P.2887 Design of viral-mimetic surfaces to recognize tumor glycolipids using hemagglutinating virus of japan envelope (HVJ-E)
Mitsuhiro Ebara, National Institute for Materials Science (NIMS), Tsukuba, Japan
- P.2889 Multimodal theranostic polymersomes composed of hybrid inorganic nanoparticles
Sanaz Ebrahimi Samani, Bioengineering, McGill University, Montreal, QC, Canada
- P.2891 A novel treatment strategy in preventing and treating heterotopic ossification
Neil M Eisenstein, Biochemical Engineering, Birmingham, United Kingdom
- P.2893 Modelling the repassivation kinetics of CoCrMo alloys in simulated body fluids
Nazanin Emami, Biotribology and Biomaterials group, Division of Machine Elements, Applied Engineering and Mathematics, Lulea, Sweden
- P.2895 Study of surface phenomena on titanium and its oxides due to its treatment with hydrogen peroxide
Abril Fonseca García, Dimensionality Low, Universidad Nacional Autónoma de México, Mexico City, Mexico
- P.2897 Surface analyses of orthopedic fixation screws submitted different Artificial Test Soil.
Rodrigo Franca, Restorative Dentistry, University of Manitoba, Winnipeg, MB, Canada
- P.2899 MALDI-TOF technique to study process-induced degradation of bioabsorbable polymers
Chirag R Gajjar, North Carolina State University, Raleigh, NC, United States
- P.2901 Synthesis and self-assembly of polypeptide- and lipid-glycosylated dendron hybrids into glyconanoparticles
Elizabeth R Gillies, Chemistry, The University of Western Ontario, London, ON, Canada
- P.2903 Adhesion, friction and lubrication of nano- and micro-structured surface coatings
Lucie Giraud, Faculty of Pharmacy, University of Montreal, Montreal, QC, Canada
- P.2905 In-situ investigation of the mineralization process of chitosan physical hydrogels by calcium phosphates
Laurent Gremillard, Materials, Engineering and Science, INSA-Lyon, Villeurbanne, France
- P.2907 Surface characterization of hematin anhydride exhibits that the method of synthesis has important effects on its applications in antimalarial testing
Elizabeth D Guerra, Mining and Materials Engineering, McGill University, Montreal, QC, Canada
- P.2909 Preparation of amperometric biosensor based on Ag/CuO fibers incorporated with horseradish peroxidase
Farrel Gunawan, Chemical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan
- P.2911 Synthetic, pH-responsive glycopolypeptides and their interactions with lectins
Katharina Haak, Institute of Technical Chemistry, University of Technology Braunschweig, Braunschweig, Germany
- P.2913 Effect of inflammatory conditions on bare and coated Ti-6Al-4V surfaces
Sarah Höhn, Material Science, Friedrich-Alexander University of Erlangen Nürnberg, Erlangen, Germany
- P.2915 Osteoinductive nanofiber scaffold for bone regeneration
Alison P Houlihan, Applied Research, RTI Surgical, Alachua, FL, United States
- P.2917 Silica functionalized ultra small iron oxide nanoparticles (IONPs) for T1-weighted magnetic resonance imaging (mri) contrast agent
Muhammad Zubair Iqbal, Division of Functional Materials and Nano-Devices, Ningbo Institute of Materials Technology & Engineering (NIMTE), Chinese Academy of Sciences (CAS), Ningbo, Pakistan
- P.2919 Modification of titanium surfaces to enhance bacteriostatic properties
Oscar J Janson, Applied Material Science, Uppsala Universitet, Uppsala, Sweden
- P.2921 MP-SPR New characterization method for interactions and ultrathin films
Annika Jokinen, BioNavis Ltd., Ylojarvi, Finland
- P.2923 Polymer/inorganic phosphor nanocomplex for near-infrared biophotonics in the second biological window
Masao Kamimura, Department of Materials Science and Technology, Tokyo University of Science, Tokyo, Japan

- P.2925 Flexible conductive graphene/polyurethane composite films for biomedical applications
Gagan Kaur, Manufacturing Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia
- P.2927 Osteoclast mediated bio-corrosion at the taper junction in total hip arthroplasty - an in-vitro study
Hayat Khan, Division of Surgery and Interventional Science, Institute of Orthopaedics, Kent, United Kingdom
- P.2929 Osteoconductivity and protein adsorbability of surface modified titanium implants using hydroprocessing
Kensuke Kuroda, Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan
- P.2931 Manufacture and in vivo evaluation of laminated microchannel neural interfaces: do endoneurial basement membrane protein coatings enhance peripheral nerve regeneration through microchannels?
Henry T Lancashire, Institute of Orthopaedics and Musculoskeletal Science, University College London, London, United Kingdom
- P.2933 Tailoring the pH-induced aggregation behaviors of mixed-charge gold nanoparticles for photothermal therapy
Huan Li, Zhejiang University, Hangzhou, P.R. China
- P.2935 The preparation of a t-PA/nanoparticle conjugate via bio-affinity ligation
Xiaoli Liu, Soochow University, Suzhou, P.R. China
- P.2937 Dextran-grafted polycation copolymer to enhance DNzyme activity and refine DNzyme-based biosensing
Atsushi Maruyama, Biomolecular Engineering, Tokyo Institute of Technology, Yokohama, Japan
- P.2939 Hafnia nanoparticles as a new x-ray contrast agent
Tracie L Mcginnity, Department of Aerospace and Mechanical Engineering, Bioengineering Graduate Program, University of Notre Dame, Notre Dame, IN, United States
- P.2941 Tailoring properties of extracellular matrix hydrogels by crosslinking with water-soluble oligourethanes and dispersion of silica particles
Birzabith Mendoza-Novelo, Chemical, Electronics and Biomedical Engineering, Universidad de Guanajuato, León, Mexico
- P.2943 Engineering mediatorless glucose oxidase microbioreactor
Geraldine EL Merle, McGill University, Montreal, Canada
- P.2945 Application of potential pulse polarization to the alkali and heat treatment on Ti-6Al-4V alloy
Sayaka Miyabe, Division of Materials & Manufacturing Science Graduate School of Engineering,, Osaka university, Suita, Japan
- P.2947 Stimuli responsive self fluorescent Nanogels for Colon cA₁ncer theranostic Applications
Jayabalan Muthu, Polymer Division, Biomedical Technology Wing, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, India
- P.2949 Hydrophobized thermoresponsive polymer brush on porous monolithic silica for effective bioseparations
Kenichi Nagase, Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University, Tokyo, Japan
- P.2951 Gellan-gum coated gold nanorods: A new tool for biomedical applications
Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal
- P.2953 Glyco-nanoparticles toward nanobiological applications: Synthesis and controlled self-assembly of poly-/oligosaccharide containing block copolymers
Issei Otsuka, Institute of Chemistry, Centre de Recherches sur les Macromolécules Végétales (CERMAV), Saint Martin D'Herès, France
- P.2955 Investigating a novel polyhydroxyalkanoate/multiwall carbon nanotubes nanocomposite as an electrically conducting implant coating for neuroprosthetic devices
Eugenia Pugliese, Bioscience, Biotechnology & Biopharmaceutics, University of Bari, Bari, Italy
- P.2957 The effect of polyaspartate chain length on in vitro remineralization of dental tissues
Bryan D Quan, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2959 Silver incorporation by plasma assisted sputtering on Ti-15Mo surfaces after nanotubes growth
André LR Rangel, Materials and Technology Department, Universidade Estadual Paulista (UNESP), Guaratinguetá, Brazil
- P.2961 Osseointegration of Ti6Al4V scaffolds produced by selective laser melting (SLM) after surface treatment
Ana Paula Rosifini Alves Claro, Materials and Technology Department, UNESP, Guaratinguetá, Brazil
- P.2963 New insights of cyanoacrylate glues in surgical applications. A comparative study of akyl cyanoacrylates.
Julio San Román, Department of Polymeric Nano and Biomaterials, Institute of Polymers, Madrid, Spain
- P.2965 Real-time observation of biomineralization process of calcium phosphate nanocrystals
Reza Shahbazian-Yassar, Mechanical Engineering, University of Illinois at Chicago, Chicago, IL, United States
- P.2967 Synthesis of three dimensional Mg-HA scaffolds from New Zealand sea urchin (evechinus chloroticus) waste shells
Amin Shavandi, Food Science, University of Otago, Dunedin, New Zealand
- P.2969 Structural characteristics and surface properties of fluoride-containing calcium phosphates derived from octacalcium phosphate
Yukari Shiwaku, Tohoku University Graduate School of Dentistry, Sendai, Japan
- P.2971 RF magnetron sputtering of bioresorbable ion doped glass coatings
Bryan W Stuart, Department of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, Nottingham, United Kingdom
- P.2973 Evaluation of the in vivo fate of ultrapure alginate in mice model
Anitha Sudheesh Kumar, School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Australia
- P.2975 Optimising diamond surface for a better neural interface
Wei Tong, Physics, the University of Melbourne, Parkville, Australia

15:00 - 16:30

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- P.2977 Development of RGD-modified Nanoparticles with Epigallocatechin Gallate (EGCG) Loading as Ophthalmic Nanomedicine to Inhibit Corneal Neovascularization Development
Ching-Li Tseng, Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University, Taipei, Taiwan
- P.2979 Fluorescent core-shell alloy nanoparticles for cell targeting applications
Siyu Tu, Ecole Polytechnique de Montreal, Montreal, QC, Canada
- P.2981 A swellable drug eluting stent to target fibrosis-induced ureteral stricture
Lim Wei Shan, School of Material Science and Engineering, Nanyang Technological University, Singapore, Singapore
- P.2983 The role of glycosaminoglycans in control of collagen biomineralization
Magdalena A Wojtas, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2985 Preparation of bioactive polymeric implant materials by the function of apatite nuclei
Takeshi Yabutsuka, Graduate School of Energy Science, Kyoto University, Kyoto, Japan
- P.2987 Bioresorbability of porous hydroxyapatite ceramics including bone minerals using pig's tibia model
Tomohiro Yokota, Meiji University, Kawasaki, Japan
- P.2989 Evaluation for the testosterone undecanoate loaded nanostructured lipid carriers
Aiping Zheng Sr, Pharmacy Department, Beijing Institute of Pharmacology and Toxicology, Beijing, P.R. China

Poster Session 2A

Clinical performance of biomaterials

- P.3021 Clinical results using bioglas in osteomyelitis - initial dutch experience
Jacobus JC Arts, Orthopaedic Surgery, Maastricht University Medical Centre, Maastricht, Netherlands
- P.3023 Synthesis of novel hydroxyapatite bone graft material from Egg shell waste- a perspective in bone reconstruction and regeneration.
Vivekanand S Kattimani, Department of Oral and Maxillofacial surgery, SIBAR Institute of dental sciences Guntur, Guntur, India
- P.3025 Effect of impact assembly on the Interface deformation and fretting corrosion of modular hip tapers: an in vitro study
Anna Panagiotidou, Biomedical Engineering, University College London, Middlesex, United Kingdom
- P.3027 Fretting corrosion of nitinol spinal rods in with titanium pedicle screws
Catherine J Pendegrass, Biomedical Engineering, University College London, Middlesex, United Kingdom
- P.3029 Curcumin loaded Poly DL lactide and hyperbranched polyglycerol blended nanofibrous scaffold for wound dressing applications
Govindaraj Perumal, Biotechnology, Indian Institute of Technology Madras, Chennai, India
- P.3031 Regenerative potential of characterised honey in wound healing
Satarupa Sarkar, School of Medical Science & Technology, Indian Institute of Technology, Kharagpur, India
- P.3033 Healing of bone after maxillary sinus floor augmentation with synthetic porous hydroxyapatite prepared by low temperature processing in the human
Marie Strnadová, Research and Development, LASAK s.r.o., Prague, Czech Republic
- P.3035 Styrene maleic anhydride formulated polyelectrolyte hydrogel with selective antimicrobial property, potentially favorable for the application as female contraceptive implant
Bhuvaneshwaran Subramanian, School of Medical Science and Technology (in collaboration with School of Bio-Science and Engineering, Jadavpur University), Indian Institute of Technology, Kharagpur, Kharagpur, India
- P.3037 Synergistic antibacterial effects mediated by graphene/iron oxide-based nanocomposites
Hsing-Wen Sung, Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan

15:00 - 16:30

220bcd (P1)

Poster Session 2B**Biomaterials for therapeutic and diagnostic delivery**

- P.2002 Development of hybrid exosomes for DDS by nanogel and liposome engineering
Kazunari Akiyoshi, Kyoto University, Kyoto, Japan
- P.2004 Protein-based catechol conjugates as aqueous adhesives and networks
Kelly A Burke, Chemical and Biomolecular Engineering, University of Connecticut, Storrs, CT, United States
- P.2006 Prospective, double-blind, randomized trial evaluating subject pain, bleeding, and wound healing using biodegradable pure collagen sponge(Colladerm®) as endo-nasal packing materials in nasal bone fracture surgery.
Kangyoung Choi, Plastic and Reconstructive Surgery, School of Medicine, Kyungpook National University, Daegu, Korea
- P.2008 Co-localizing non-viral gene therapy with TLR agonists to engineer lymph node function for anti-tumor immunity
Neil M Dold, Fischell Department of Bioengineering, University of Maryland College Park, College Park, MD, United States N/A
- P.2010 Programming lymph node function for tolerance using second generation mTOR inhibitors
Emily A Gosselin, Fischell Department of Bioengineering, University of Maryland - College Park, College Park, MD, United States N/A
- P.2012 Fast degradation but low fracture property of Mirage Microfiber Bioresorbable Scaffold using a swine internal thoracic artery model: a preliminary study
Louis-Georges Guy, AccellAB Inc., Boisbriand, QC, Canada N/A
- P.2014 Imaging mass spectrometry: Analysis of pharmaceutically modified biomaterials from in vitro to in vivo
Anja Henß, Physical Chemistry, Justus-Liebig University of Gießen, Gießen, Germany N/A
- P.2016 Mucoadhesive, nanostructured microparticles for their prolonged retention in gastrointestinal tract
Beom Kang Huh, Interdisciplinary Program for Bioengineering, College of Engineering, Seoul National University, Seoul, Korea N/A
- P.2018 Characterization of commercially available sodium alginates towards development of an optimal islet cell encapsulation therapy for type 1 diabetes
Jessica Hutcheson, ViCapsys, Athens, GA, United States N/A
- P.2020 Exploring zwitterionic siRNA polyplex coronas as an alternative to traditional PEGylated architectures for improved intravenous pharmacokinetics
Meredith A Jackson, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States N/A
- P.2022 Visualization of nitric oxide-producing macrophages with a polymer micelle-based fluorescent probe
Jun-Ichiro Jo, Department of Biomaterials, Institute for Frontier Medical Sciences, Kyoto University, Kyoto, Japan N/A
- P.2024 Intracellular targeting of an inhibitor of Alzheimer's BACE1 enzyme in human neurons
Jong Ah Kim, Department of Chemistry and Applied Biosciences, Institute of Pharmaceutical Sciences, ETH Zurich, Zurich, Switzerland N/A
- P.2026 Fibrin glue embedded with biodegradable plga microparticles for sustained delivery of anesthetic drug, bupivacaine
Se Na Kim, Biomedical engineering, Seoul National University, Seoul, Korea N/A
- P.2028 Spatial distribution of anti-cancer drug in mice skin studied by infrared microspectroscopy.
Quoc Chon Le, Chemistry Department, Université Laval, Québec, QC, Canada N/A
- P.2030 Implantable infusion pump for on-demand release of insulin
Seung Ho Lee, Seoul National University, Seoul, Korea N/A
- P.2032 Neuropeptide YY1 receptors-based nanoparticulate delivery system for targeted imaging and therapy of breast cancer
Juan Li, Division of Functional Materials and Nano-Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, P.R. China N/A
- P.2034 Cytoplasmic dynein associated peptide-linked nanoparticles for non-viral vector applications
Wai Hong Lo, Medicine, University of Connecticut Health Center, Farmington, CT, United States N/A
- P.2036 Ability to self-assemble of humic acids for production of pH responsive nanoparticles with antioxidant activity and capability for entrapping lipophilic compounds
Fernanda Lopes Motta, University of Campinas, Campinas, Brazil N/A
- P.2038 Nanoparticle-mediated delivery of siRNAs modulates mesenchymal stem cell differentiation
Dominic W Malcolm, Biomedical Engineering, University of Rochester, Rochester, OH, United States N/A
- P.2040 Efficacy of a nAg modified orthodontic primer reducing demineralization around brackets: an in vivo study
Gabriela Moreno-Meraz, Universidad Autónoma de San Luis Potosí (UASLP), San Luis Potosí, Mexico N/A
- P.2042 Development of novel poly (ester amides) for tuneable localized delivery applications
Janeni Natarajan, Giridhar Madras, Kaushik Chatterjee Indian Institute of Science, Bangalore-560012 INDIA
Janeni N Natarajan, Indian Institute of Science, Bangalore, India
- P.2044 pH-triggered cascading charge-conversion and redox-controlled gene release design: a new sight into modularized nonviral gene transfection
Yu Nie, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China N/A
- P.2046 Multiple siRNA delivery against cell cycle and anti-apoptosis proteins in breast cancer and normal cells
Manoj Parmar, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Edmonton, AB, Canada N/A
- P.2048 Alendronate-conjugated graphene oxide for targeted delivery of doxorubicin for inhibition of bone metastasis in metastatic breast cancer
Tung T Pham, College of Pharmacy, Yeungnam university, Gyeongsan, Korea N/A

- P.2050 Convective loading and release of latanoprost in silicone hydrogel contact lenses
William G Pitt, Chemical Engineering, Brigham Young University, Provo, UT, United States N/A
- P.2052 Multistimuli responsive mesoporous silica nanoparticles for colon targeting
Amirali A Popat, The School of Pharmacy-Mater Research Institute, The University of Queensland, Brisbane, Australia N/A
- P.2054 Porphyrin encapsulated poly(3-hydroxybutyrate) microspheres in target specific photodynamic therapy for cancer
Hima Puthussery, Faculty of Science and Technology, University of Westminster, Surrey, United Kingdom N/A
- P.2056 Ultrasoft shear-thinning zirconium-based hydrogels for trapping and reconfiguring model nanodrugs N/A
Amir Sheikh, Chemistry, McGill University, Montreal, QC, Canada
- P.2058 CTHRSSVC-peptide as a possible early molecular imaging target for atherosclerosis and cancer
Rosemeire Aparecida Silva, Laboratory of Immunology, Heart Institute, Hospital das Clínicas da Universidade de São Paulo, São Paulo, Brazil N/A
- P.2060 A new platform for theranostics
Simone Sprio, Institute of Science and Technology for Ceramics, National Research Council, Faenza, Italy N/A
- P.2062 Therapeutic acrylates for enhanced medical adhesives
Stefanie A Sydlík, Chemistry, Carnegie Mellon University, Pittsburgh, PA, United States N/A
- P.2064 Advanced biomedical device coatings inspired by prebiotic chemistry
Helmut Thissen, Manufacturing Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton, Australia N/A
- P.2066 Study of degradability and cytotoxicity of polyurethanes obtained from polyols derived from castor oil and starch modified via Glycosylation with Ethylene Glycol
Yomaira Y Uscategui, Doctorado en Biociencias, Universidad de La Sabana, Chia, Colombia N/A
- P.2068 Combination of chemotherapeutics with redox nanoparticles for colon cancer
Long Binh Vong, Department of Materials Science, University of Tsukuba, Tsukuba, Japan N/A
- P.2070 Targeted ultrathin silica nanoshells as hifu sensitizing agents for in vivo Incap prostate tumor removal
James Wang, Nanoengineering, University of California San Diego, La Jolla, CA, United States N/A
- P.2072 Injectable, guest-host assembled hydrogels for delivery of RNAi therapeutics
Leo L Wang, Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, United States N/A
- P.2074 Comparison of enzymatic and accelerated oxidative degradation methods to evaluate chitosan
Carlos M Wells, Biomedical Engineering, The University of Memphis, Memphis, TN, United States N/A

- P.2076 Therapeutic adhesives: covalently modified acrylates for enhanced, injury-specific wound healing
Zoe M Wright, Carnegie Mellon University, Pittsburgh, PA, United States N/A
- P.2078 Peptide engineered adhesive/dentin interfacial integrity
Qiang Ye, Bioengineering Research Center Laboratories, University of Kansas, Lawrence, KS, United States N/A
- P.2080 Fractal methodology analysis on microstructure of bionics bone through three-dimensional biofabrication
Chi Zhang, Northwestern Polytechnical University, Xi'an, P.R. China N/A

15:00 - 16:30

220bcd (P1)

Poster Session 2B

Specific applications of biomaterials

- P.2082 The design, synthesis and characterization of cationic monomers for hydrogels
Musa Alhakimi, Chemical Engineering, McMaster University, Oakville, ON, Canada N/A
- P.2084 Fibrin hydrogels functionalized with alpha6beta1 ligands for transplantation of neural stem/progenitor cells
Isabel F Amaral, NanoBiomaterials for Targeted Therapies (nBTT) group, Biomaterials for Neuroscience Research Team, Instituto de Engenharia Biomédica (INEB), I3S, Institute for Research and Innovation in Health, University of Porto, Porto, Portugal N/A
- P.2086 Effect of a composite matrix containing various ratios of hydroxyapatite doped with strontium on tissue mineralization formed in ectopic site
Joëlle Amedee, University of Bordeaux, Inserm, Bordeaux, France N/A
- P.2088 Effect of the substitutional zirconium on selected mechanical properties of Ti-10Mo-based alloy, for biomedical applications
Raul O Araújo, Universidade Estadual Paulista (UNESP), Bauru, Brazil N/A
- P.2090 Correlation between free radical content and mechanical properties of ribose-protected irradiation sterilized cortical bone allografts
Tarik Attia, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada N/A
- P.2092 An external shape memory mesh to prevent dialysis graft failure
Timothy C Boire, Biomedical Engineering, Vanderbilt University, Nashville, TN, United States N/A
- P.2094 Hydroxyapatite-polycaprolactone membrane in the treatment of induced periodontal disease in dogs
Andrea Pacheco Batista Borges, Veterinary Department, Federal University of Viçosa, Viçosa, Brazil N/A
- P.2096 Novel high-strength bioabsorbable bone adhesives
Antony Bou-Francis, Department of Process Engineering & Applied Science, Dalhousie University, Halifax, NS, Canada N/A
- P.2098 Improved hemocompatibility and analytical performance of intravascular oxygen sensors via nitric oxide (NO) releasing catheters
Elizabeth J Brisbois, Surgery, University of Michigan, Ann Arbor, MI, United States N/A

- P.2100 Peripheral nerve-specific extracellular matrix hydrogel supports repair after peripheral nerve injury
Bryan N Brown, McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA, United States N/A
- P.2102 A novel approach to develop hyaluronic acid enhanced polyethylene terephthalate
Hieu T Bui, School of Biomedical Engineering, Colorado State University, Fort Collins, CO, United States N/A
- P.2104 3D tumorsphere array-based invasion assay platform
Junghwa Cha, Bio and Brain Engineering, Korean Advanced Institute of Science and Technology, Daejeon, Korea N/A
- P.2106 Parametric and experimental studies on the influence of design parameters on stress induced in bicortical dental implant and bone interface.
Manish Chaturvedi, Department of Mechanical, Indian Institute of Technology Delhi, New Delhi, India N/A
- P.2108 Porcine anorganic bone mineral for guided bone regeneration in dental surgeries part i: development and in vitro characterization
Hui-Chen Chen, Research & Development, Collagen Matrix Inc., Oakland, NJ, United States
- P.2110 Research progress of micro/nano-bioactive glasses for bone and skin retoration
Xiaofeng Chen, Department of Biomedical Engineering, South China University of Technology, Guangzhou, P.R. China
- P.2112 The influence of lubricant temperature on the wear of a metal-free knee implant
Raelene M Cowie, Institute of Medical and Biological Engineering, University of Leeds, Leeds, United Kingdom
- P.2114 Mechanical and in vivo assessment of injectable germanium based glass ionomer cements for vertebroplasty
Brett Dickey, School of Biomedical Engineering, Dalhousie University, Halifax, NS, Canada
- P.2116 Comparison between colloiddally-confined and molecularly-dissolved polyphosphates for activating the contact pathway of blood coagulation
Alexander J Donovan, Chemical Engineering, University of Illinois at Chicago, Chicago, IL, United States
- P.2118 Degradation and cell proliferation in a fast-degrading thioacrylate based hydrogel for cranial regeneration
Alarbi M Emmakah, Biomedical Engineering, University of Bridgeport, Indianapolis, IN, United States
- P.2120 FKN-aptamer functionalized hydrogels for local enrichment of M2 macrophages after traumatic brain injury
Syed Faaz Enam, Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, United States
- P.2122 Evaluation of releasing of an aqueous extract of propolis from Huila (Colombia) associate in collagen type I scaffolds with microparticles of gelatin-collagen
Leonardo Fernández Rodríguez, Regency of Pharmacy, Servicio Nacional de Aprendizaje SENA, Bogota, Colombia
- P.2124 Dermal fibroblasts with impaired migration for in vitro models of aged wound healing for testing new biomaterials-based therapies for chronic wounds.
Elena García-Gareta, RAFT Institute of Plastic Surgery, Northwood, United Kingdom
- P.2126 Innovative biodegradable and bioabsorbable polymer matrix composites reinforced with magnesium-base particles (PLA/Mg) for bone repair
Jose Luis González-Carrasco, Physical Metallurgy, National Centre for Metallurgical Research, Madrid, Spain
- P.2128 Application of bone marrow mesenchymal stem cell-derived extracellular matrix in peripheral nerve tissue engineering
Yun Gu, Jiangsu Key Laboratory of Neuroregeneration, Co-innovation Center of Neuroregeneration, Nantong University, Nantong, P.R. China
- P.2130 Absorbable polymer degradation responding to artificial plaque composition
Ji Guo, U.S. Food and Drug Administration, Silver Spring, MD, United States
- P.2132 Silica fillers of varying size and their effect on mechanical and optical properties
Eric Habib, Chemistry, Université de Montréal, Montreal, QC, Canada
- P.2134 Migration and differentiation of neural stem cells in novel random and aligned nanofibrous scaffolds.
Hadi Hajiali, Smart Materials, Nanophysics, Istituto Italiano di Tecnologia (IIT), Genoa, Italy
- P.2136 Neural stem/progenitor cells cultured on gamma-crosslinked poly(vinyl alcohol) hydrogels
Masayuki Hara, Department of Biological Science, Graduate School of Science, Osaka Prefecture University, Sakai, Japan
- P.2138 Bioactive modification of decellularized matrix for vascular applications
Monica T Hinds, Biomedical Engineering, Oregon Health & Science University, Portland, OR, United States
- P.2140 Obtaining a full range of surface energies on single wall carbon nanotube samples through photo-initiated chemical vapor deposition
Seyedehsan SH Hosseininasab Sr, Chemical Engineering, polytechnique montreal university, Montreal, QC, Canada
- P.2142 Modification of titanium surfaces to enhance bacteriostatic properties.
Oscar J Janson, Applied Material Science, Uppsala Universitet, Uppsala, Sweden
- P.2144 Unravelling the binding energetics of a synthetic polymeric heparin antidote with heparin using isothermal titration calorimetry
Manu Thomas Kalathottukaren, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada
- P.2146 Egg shell derived hydroxyapatite as bone graft material in maxillofacial skeleton - A randomized blind multi-center clinical trial.
Vivekanand S Kattimani, Department of Oral and Maxillofacial surgery, SIBAR Institute of dental sciences Guntur, Guntur, India
- P.2148 Control of epigenetics modification by lipid-coated biodegradable nanoparticles for the novel cancer therapy
Hiro Yoshi Kawakami, Department of Applied Chemistry, Tokyo Metropolitan University, Tokyo, Japan

- P.2150 Production of an autologous bone tissue using cell-derived extracellular matrix as a natural biomaterial
Fabien Kawecki, Regenerative Medicine Division, Centre de recherche en organogénèse expérimentale de l'Université Laval/LOEX; Centre de recherche du CHU de Québec-Université Laval, Québec, QC, Canada
- P.2152 Neurotrophic effects of folic acid on promoting neurite outgrowth
Gloria Bora Kim, Bioengineering, Pennsylvania State University, State College, PA, United States
- P.2154 Suppression of osteoclast formation by gold nanoparticles conjugated alendronate
Donghyun Lee, Kyung Hee University, Seoul, Korea
- P.2156 Radiopaque and MRI-visible embolizing agents for vascular applications
Sophie Lerouge, Mechanical Engineering, Ecole de Technologie Supérieure, Montreal, QC, Canada
- P.2158 Heparin-PEG colocalization enhances heparin release from pcl based vascular graft prostheses
Chaojing Li, Department of Technical Textiles, College of Textiles, Donghua University, Shanghai, P.R. China
- P.2160 Development and bone regeneration of a composite scaffold with lotus-type structure
Jidong Li, Research Center for Nano-Biomaterials, Analytical & Testing Center, Sichuan University, Chengdu, P.R. China
- P.2162 Evaluation of a self-expandable mineral-collagen composite implant as an osteoconductive scaffold for bone growth and regeneration in a rabbit femoral bone defect model
Shu-Tung Li, Research & Development, Collagen Matrix Inc., Oakland, NJ, United States
- P.2164 Porcine collagen membrane for guided bone regeneration: in vitro and in vivo characterization studies
Morakot Likhitpanichkul, Research and Development, Collagen Matrix Inc., Oakland, NJ, United States
- P.2166 In-situ fenestration of stent-grafts: an in-vitro study of the influence of different fabric structures
Jing Lin, Key Laboratory of Textile Science and Technology of Ministry of Education, College of Textiles, Donghua University, Shanghai, P.R. China
- P.2168 Graft-type antithrombogenic MPC polymers as the surface modifier on the small-diameter vascular prostheses of segmented polyurethane
Yihua Liu, Bioengineering, The University of Tokyo, Tokyo, Japan
- P.2170 Hydroxyapatite based biopolymer scaffold for bone tissue engineering
Kanchan Maji, Ceramic Engineering, National Institute of Technology, Rourkela, India
- P.2172 Optimization of zwitterionic macromolecule conjugation to polymethylpentene hollow fiber membranes for artificial lung applications
Alexander D Malkin, Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States
- P.2174 3D powder printing of resorbable calcium phosphate scaffold for low load-bearing application using novel phytic acid binder
Sourav Mandal, Materials Reserach Centre, Indian Institute of Science, Bangalore, India
- P.2176 Cell therapy for transplantations in cardiovascular system: decellularization and recellularization of porcine pericardium
Marie Markova, Department of Biomaterials and Tissue Engineering, Institute of Physiology CAS, Prague, Czech Republic
- P.2178 Constructed and modified hierarchical porous poly (lactic acid) scaffolds by mimic approach for bone interfacial area in musculoskeletal tissue engineering
Jirut Meesane, Institute of Biomedical Engineering, Prince of Songkla University, Hat-Yai, Thailand
- P.2180 Development of a spinal implant - A material selection process to control the dynamic stiffness
Michel Mesnard, Institut de Mécanique et d'Ingénierie, Université de Bordeaux, Bordeaux, France
- P.2182 Bone matrix/copolymer/gelatin scaffold (SmartBone®) as a biomimetic graft for sinus lift procedure in dental surgery
Mario Milazzo, The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Italy
- P.2184 Effect of Solution Treatment on Microstructure and Mechanical Properties of Dental Ag-Pd-Cu-Au System Alloy.
Tsubasa Mizuno, Meijo University, Nagoya, Japan
- P.2186 Borophosphosilicate Glass- Polycaprolactone Hybrid Scaffolds for Bone Tissue Engineering
Dibakar Mondal, Chemical and Biochemical Engineering, The University of Western Ontario, London, ON, Canada
- P.2188 New bioactive, osteointegrative strontium-substituted apatite cements for bone regeneration
Monica Montesi, Bioceramics and Bio-hybrid Composites Group, Institute of Science and Technology for Ceramics (ISTEC), National Research Council of Italy (CNR), Faenza, Italy
- P.2190 Photochemical tissue penetration via photosensitizer for the efficient penetration of drug into tumor tissue
Kun Na, Department of Biotechnology, The Catholic University of Korea, Bucheon-si, Korea
- P.2192 Chemotherapeutic resistance in 3D biomaterials
Lenny J Negron-Pineiro, Chemical Engineering, University of Massachusetts - Amherst, Sunderland, MA, United States
- P.2194 Chemically cross-linked UHMWPE with improved toughness
Ebru Oral, Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA, United States
- P.2196 Synthesis and characterization of a novel, biomimetic, tribologically enhanced hydrogel for biomedical applications
Allen O Osaheni, Syracuse Biomaterials Institute, Syracuse, NY, United States
- P.2198 A novel antimicrobial scaffold for root canal disinfection - effects on dental pulp stem cell function
Divya Pankajakshan, Division of Dental Biomaterials, Indiana University School of Dentistry, Indianapolis, IN, United States
- P.2200 Bio-inspired nano-composites with smart functionalities for tissue regeneration
Silvia Panseri, Institute of Science and Technology for Ceramics, National Research Council of Italy (ISTEC-CNR), Faenza, Italy

- P.2202 Hemostatic agents for hemorrhage control on the battlefied
Henry Peng, Defence Research and Development Canada, Toronto, ON, Canada
- P.2204 Surface delivery of tunable doses of BMP-2 from an adaptable polymeric scaffold induces fast bone regeneration
Catherine Picart, Bioengineering, Grenoble Institute of Technology, Grenoble, France
- P.2206 Synthesis of hybrid materials based polyester urethanes/ TiO₂ and in vitro evaluation as potential biomaterial for bone tissue regeneration
Luis M Rodriguez-Lorenzo, ICTP-CSIC, Madrid, Spain
- P.2208 Effect of locally injected osteoblasts combined with a barrier membrane on the repair of bone defects
Adalberto Rosa, Oral & Maxillofacial Surgery, School of Dentistry of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil
- P.2210 Influence of chitosan and composite chitosan-based coatings deposited on Ti13Zr13Nb alloy on MG-63 osteoblast-like cell behavior
Lucja D Rumian, Faculty of Materials Science and Ceramics, Department of Biomaterials, AGH - University of Science and Technology, Krakow, Poland
- P.2212 Biodegradable radiopaque water responsive shape memory polymer-hydrogel composite: a device for temporary embolization therapy for liver cancer
Yee Shan Wong
- P.2214 Chondroitin sulfate-oriented epidermal growth factor (EGF) coating for random and aligned electrospun vascular grafts
Houman Savoji, Institute of Biomedical Engineering, Ecole Polytechnique of Montreal, Montreal, QC, Canada
- P.2216 Viscoelastic, physical and biodegradable properties of dermal scaffolds and related cell behaviour.
Vaibhav Sharma, Biochemical Engineering, RAFT, Northwood, United Kingdom
- P.2218 Nitroxide radical containing nanoparticle as a potential candidate for redox therapeutics in breast cancer
Babita Shashni, Department of Material Sciences, Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan
- P.2220 Nanocomposite membrane modified by different carbon nanoforms as potential materials for peripheral nerves implants
Ewa Stodolak-Zych, Department of Biomaterials, UST-AGH University of Science and Technology, Krakow, Poland
- P.2222 Cytogenetic safety of hBT-MSCs after long-term cryopreservation
Takayuki Sugimoto, Department of Plastic and Aesthetic Surgery, Kitasato University School of Medicine, Kanagawa, Japan
- P.2224 Factors that affect the behavior of CoCrMo taper junctions under cyclic loading
Oleg Vesnovsky, Division of Applied Mechanics, FDA/CDRH, Silver Spring, MD, United States
- P.2226 Investigating the complement response to intravenously infused nanoparticles
Nishant Uppal, Biomedical Engineering, Case Western Reserve University, Jeffersonville, IN, United States
- P.2228 Smart materials for embryonic neural development-Preliminary results
Carolina Vargas Estevez, Micro and Nano tools, Institute of Microelectronics of Barcelona IMB-CNM, Cerdanyola del Vallès (Bellaterra), Spain
- P.2230 Hyaluronic acid hydrogels for spinal cord regeneration
Christopher M Walthers, Bioengineering, University of California, Los Angeles, Los Angeles, CA, United States
- P.2232 Biodegradable elastomers based on POSS-initiated poly(epsilon-caprolactone) for regulating smooth muscle cells
Shanfeng Wang, Department of Materials Science and Engineering, and Institute of Biomedical Engineering, The University of Tennessee, Knoxville, TN, United States
- P.2234 Rapid in situ endothelialization of small diameter vascular graft with catalytic nitric oxide generation and promoted endothelial cell adhesion
Shufang Wang, College of Life Sciences, Nankai University, Tianjin, P.R. China
- P.2236 A biofunctionalized material with wound-like features to rapidly measure platelet function under flow
Nathan J White, Emergency Medicine, University of Washington, Seattle, WA, United States
- P.2238 Bridging 30mm dog sciatic nerve defeat by using an electrospun silk fibroin based nerve graft
Chengbin Xue, Jiangsu Key Laboratory of Neuroregeneration, Nantong University, Nantong, P.R. China
- P.2240 Potential application of nano-hydroxyapatite in treatment of osteoporotic bone healing - a preliminary study
Xiao Yang, National Engineering Research Center for Biomaterials, Chengdu, P.R. China
- P.2242 Dental resin curing blue light induces contraction of rat aorta through hydrogen peroxide production
Oguzhan Yildiz, Medical Pharmacology, Gulhane Faculty of Medicine, Ankara, Turkey
- P.2244 Electrospun SF/PLLA-CL graft with PRGF for inducing smooth muscle cell growth & infiltration
Anlin Yin, Sichuan University, Chengdu, P.R. China
- P.2246 Inhibition of RGD-modified composite nerve conduit on traumatic neuroma formation
Yixia Yin, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Biomedical Materials and Engineering Research Center of Hubei Province, Wuhan University of Technology, Wuhan, Wuhan, P.R. China
- P.2248 Inverse behavior between osteoblasts and fibroblasts on carbon-coated titanium surfaces
Chie Yoshihara, Removable Partial Prosthodontics, Tokyo Medical and Dental University, Tokyo, Japan
- P.2250 Effects of resin monomers and their degradation by-products and the long-term inhibitory activity of galardin on human dental matrix metalloproteinases
Shawket Zaman, Biomaterials, Faculty of Dentistry, University of Toronto, Scarborough, ON, Canada
- P.2252 Anti-biofilm effect of denture base resin containing Dimethylaminododecyl methacrylate on multi-species biofilm
Xuedong Zhou, Sichuan University, Chengdu, P.R. China

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Poster Session 2B**Biomaterials in cellular engineering**

- P.2302 The development of 3D organ-on-a-chip devices
Hossein Bahmaee, Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom
- P.2304 Titanium surface properties indirectly regulate osteoclasts via osteoblast lineage cells
Barbara D Boyan, School of Engineering, Virginia Commonwealth University, Richmond, VA, United States
- P.2306 Electronic monitoring of a 3D in vitro model of the renal tubule with integrated microfluidics
Vincenzo F Curto, Department of Bioelectronics, Ecole Nationale Supérieure des Mines, Gardanne, France
- P.2308 The regulation and interplay between the Notch and BMP pathways in the periosteum and its implications in bone tissue engineering.
Dietmar W. W Huttmacher, Institute of Health and Biomedical Innovation, Queensland University of Technology (QUT), Brisbane, Australia
- P.2310 Stiffness of hydrogels modulates cellular reprogramming efficiency through mesenchymal-to-epithelial transition and stemness markers
Soo-Hong Lee, Department of Biomedical Science, CHA University, Seongnam-shi, Korea
- P.2312 Mechanisms of human mesenchymal stromal cells during bone regeneration are impacted by the associated biomaterial
Miryam MM Mebarki, Institut Mondor de Recherche Biomedicale (IMRB), Institut National de la Santé et de la Recherche Medicale, Créteil, France, Metropolitan
- P.2314 Investigation of Dendrimer-based nanoparticles cellular uptake and cell tracking in a semi-automated microfluidic platform
J.M. Oliveira, Department of Polymer Engineering, 3B's research Group, Guimarães, Portugal
- P.2316 TRACER: a 3D engineered tumour for mapping cell metabolism and phenotype in heterogeneous microenvironments
Darren G Rodenhizer, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- P.2318 Expansion of adipose-derived stem cells with FGF2 up-regulates mesenchymal markers and modifies osteogenic differentiation potential
Slawomir Ruminski, Department of Histology and Embryology, Centre for Preclinical Research and Technology, Medical University of Warsaw, Warsaw, Poland
- P.2320 Physicochemical properties of microfabricated hydrogel scaffolds modulate tumor dormancy and chemotherapy resistance in a hepatic all-human microphysiologic model of metastasis
Alex J Wang, Biological Engineering, MIT, Boston, MA, United States

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Poster Session 2B**Building blocks**

- P.2322 Cyclical pressure on compression-moulded bioresorbable phosphate-glass fibre reinforced composites
Fernando Barrera Betanzos, Materials, Mechanics and Structures, University of Nottingham, Nottingham, United Kingdom
- P.2324 Comparison of bilayered structures of gellan gum with and without incorporation of gold nanorods for osteochondral tissue engineering
Alexandre A Barros, Department of Polymer Engineering, 3Bs Research Group, University of Minho, Guimaraes, Portugal
- P.2326 Ring opening polymerization of well defined poly(propylene fumarate) oligomers and their use in 3D printed scaffolds
Matthew L Becker, Polymer Science, The University of Akron, Akron, OH, United States
- P.2328 Sustained delivery of thymoquinone and epigallocatechin-3 gallate to potentiate osteogenesis in a femoral rat defect rat model
Hamed A Benghuzzi, Diagnostic and Clinical Health Sciences, University of Mississippi Medical Center, Jackson, MS, United States
- P.2330 Microwave assisted magnesium phosphate coating on AZ31
Sarit B Bhaduri, MIME and Surgery (Dentistry), University of Toledo, Toledo, OH, United States
- P.2332 Effect of PGA/PCL on the structure-property relation of PLA during tube extrusion
Pooja Bhati, Department of Mechanical Engineering, Indian Institute of Technology Delhi, New Delhi, India
- P.2334 Core/shell microgels with "switchable" deformability
Ashley C Brown, Biomedical Engineering, North Carolina State University and University of North Carolina at Chapel Hill, Raleigh, NC, United States
- P.2336 Development of a dual setting hydroxyapatite cement system with pseudoplastic mechanical behavior
Theresa Brückner, Department for Functional Materials in Medicine and Dentistry, University of Würzburg, Würzburg, Germany
- P.2338 Biomaterial derived from fungal treated kraft lignin
Ivana Brzonova, Chemical Engineering, University of North Dakota, Grand Forks, ND, United States
- P.2340 Robust and thermosensitive poly(ethylene glycol)-poly(epsilon-caprolactone) (PEG-PCL) star block copolymer hydrogels
Sytze J Buwalda, Artificial Biopolymers, University of Montpellier, Montpellier, France
- P.2342 Bioactive nano fluorapatite/polyetheretherketone composite for orthopedic implants
Liang Cai, East China University of Science and Technology, Shanghai, P.R. China
- P.2344 Absorbable magnesium alloys
Jake D Cao, ETH Zurich, Zurich, Switzerland

- P.2346 Utilizing rosette nanotubes for the delivery of siRNA for cancer therapeutics
Gino Karlo L Delos Reyes, Chemical Engineering, Northeastern University, Boston, MA, United States
- P.2348 A further study on effects of pH on in vitro degradation of poly(glycolide-co-l-lactide) fibers
Meng Deng, Research & Development, Ethicon, a Johnson & Johnson Company, Somerville, NJ, United States
- P.2350 Engineering *e. coli* to enable electron transfer along curlin protein nanofibers
Noémie-Manuelle Dorval Courchesne, Wyss Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, United States
- P.2352 Effect of bioceramic functional groups on drug binding and release kinetics
Ahmed Ei-Ghannam, Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte, Charlotte, NC, United States
- P.2354 Physical, mechanical and biodegradation properties of ω -pentadecalactone-co- δ -hexalactone copolymers
Jorge Fernández Hernández, Department of Mining-Metallurgy and Materials Science, University of the Basque Country, Bilbao, Spain
- P.2356 Hydroxyapatite formation on bioglass-containing bone void filler
Chloë M Goldbach, Research & Development, NovaBone Products, Alachua, FL, United States
- P.2358 Corrosion behavior of new beta type Ti-29Nb-13Ta-4.6Zr alloy in simulated body fluid solution
Gunawarman Gunawarman, Mechanical Engineering Department, Andalas University, Padang, Indonesia
- P.2360 Combinatorial use of cobalt and fluoride to improve angiogenesis and osteogenesis in calcium phosphate bone graft substitutes
Pamela Habibović, Instructive Biomaterials Engineering, Maastricht University, Maastricht, Netherlands
- P.2362 Effects of heat treatment on magnetic susceptibility and hardness of Au-Nb alloys for MRI Artifact-free Biomedical Applications
Kenichi Hamada, Biomaterials and Bioengineering, Institute of Biomedical Sciences, Tokushima, Japan
- P.2364 Elucidation of design rules for integrin ligand clustering in biomaterials using protein-engineered fabrics
Sarah C Heilshorn, Materials Science & Engineering, Stanford University, Stanford, CA, United States
- P.2366 Synthesis and characterization of low aspect ratio and dispersible hydroxyapatite nanoparticles via a simple wet chemical method
Nendar Herdianto, School of Chemistry and Molecular Bioscience, University of Queensland, Brisbane, Australia
- P.2368 Anionic surfaces with minimal charge density can restore burst coagulation of microparticle/exosome-depleted blood plasma
Caroline D Hoemann, Chemical Engineering, Ecole Polytechnique, Montreal, QC, Canada
- P.2370 Biomimetic intrafibrillar silicification of collagen fibrils
Changmin Hu, University of Connecticut, Institute of Materials Science, Storrs, CT, United States
- P.2372 Engineering bacillus subtilis biofilms as living functional materials
Jiaofang Huang, School of Physical Science and Technology, ShanghaiTech University, Shanghai, P.R. China
- P.2374 Regulation of osteoclast function by poly(ethylene sodium phosphate)
Yasuhiko Iwasaki, Department of Chemistry and Materials Engineering, Kansai University, Osaka, Japan
- P.2376 Hybrid, oxide-ceramic coatings formed on titanium alloys by PEO-EPD processes
Alicja Maria Kazek-Kesik, Silesian University Of Technology, Gliwice, Poland
- P.2378 Design and simulation of a self-assembling laminin-elastin fusion protein matrix
Kyle Lampe, Chemical Engineering, University of Virginia, Charlottesville, VA, United States
- P.2380 A composite approach: adapting emulsion templated polymers for use in bone tissue engineering
Aaron Z Lee, School of Engineering, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
- P.2382 HUVECs functions influenced by topographical features on titanium
Jiao Li, School and Hospital of Stomatology, Peking University, Beijing, P.R. China
- P.2384 Activity and toxicity of a recombinant LL37 antimicrobial peptide
Lindsay D Lozeau, Chemical Engineering, Worcester Polytechnic Institute, Worcester, MA, United States
- P.2386 New generation of hydroxyapatite bone grafts from 'coral like'™ synthetic inorganic precursors
Nimmy Mohan, Bioceramics Laboratory, Sree Chitra Tirunal Institute For Medical Sciences and Technology (SCTIMST), Trivandrum, Kerala, India
- P.2388 Room-temperature preparation of phosphate glass microspheres as carriers for therapeutic agents
Arash Momeni, Dalhousie University, Halifax, NS, Canada
- P.2390 BMP-2 release from synthetic collagen peptide particles
Didem Mumcuoglu, Life Sciences, Fujifilm Europe B.V., Tilburg, Netherlands
- P.2392 The effect of poly(glycerol sebacate) stoichiometry on its physical characteristics
Brendan Nicholson, Research & Development, Secant Medical, Telford, PA, United States
- P.2394 Reinforcement of alpha-tricalcium phosphate-based cement by incorporation of rod-shaped hydroxyapatite
Chikara Ohtsuki, Graduate School of Engineering, Nagoya University, Nagoya, Japan
- P.2396 Role of nukbone in bone regeneration
Nayeli Rodríguez Fuentes Jr, Metales y Cerámicos, Instituto de Investigaciones en Materiales, UNAM, Mexico, Mexico
- P.2398 Biodegradable spherical granules for bone healing of critical-size cranial defects in growing rabbits
Hani Shash Sr, Plastic Surgery, McGill University, Montreal, Canada

- P.2400 Biodegradable polyanhydrides from thiol-ene polymerizations: fast, robust and reliable curing yields surface eroding materials
Devon A Shipp, Department of Chemistry & Biomolecular Science, Clarkson University, Potsdam, NY, United States
- P.2402 Phage-templated gold nano-aggregates for cancer treatment
Esen Sokullu, Énergie Matériaux Télécommunications (EMT), Institut National de la Recherche Scientifique (INRS), Varennes, QC, Canada
- P.2404 Electrical resistance of dental luting cements investigated by the impedance methodology related to their porosities and solubility
Viritpon Srimanepong, Department of Prosthodontics, Faculty of Dentistry Chulalongkorn University, Bangkok, Thailand
- P.2406 Immobilization of nucleic acid aptamer on macrophages for circulating tumor cell capture
Shunsuke Sugimoto, Kansai University, Osaka, Japan
- P.2408 Preparation of titanium/tricalcium phosphate bone implant materials by spark plasma sintering
Yanni Tan, State Key Laboratory of Powder Metallurgy, State Key Lab of Powder Metallurgy, Central South University, Chang Sha, P.R. China
- P.2410 In-vitro dissolution and mineralization of silicon-doped hydroxyapatite produced by a thermal technique
Maryam Tavafoghi, Mechanical Engineering, McGill university, Montreal, QC, Canada
- P.2412 Histological characteristics of formed bone around porous titanium-polyglycolide composites
Masato Ueda, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Suita, Japan
- P.2414 Bioactive ceramics interfacial intervention and effects on their biological performance
Guocheng Wang, Research Center for Human Tissues & Organs Degeneration, Shenzhen Institute of Advanced Technology, Chinese Academy of Science, Shenzhen, P.R. China
- P.2416 3D printing of hydroxyapatite/chitosan and collagen scaffolds for bone tissue engineering
Kai Wang, Northwestern Polytechnical University, Xi'an, P.R. China
- P.2418 MRI-compatible Nb-60Ta-2Zr alloy used for vascular stents: mechanical properties, corrosion resistance and haemocompatibility
Jian Xu, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, P.R. China
- P.2420 Effect of extrusion and annealing on the mechanical and corrosion properties of the magnesium alloys
Zhigang Xu, NSF ERC for Revolutionizing Metallic Biomaterials, North Carolina A&T State University, Greensboro, NC, United States
- P.2422 Tailoring the degradation behavior and the bioactivity of pure Mg by polycaprolactone/bioactive glass coatings
Yuyun Yang, The Institute for Biomaterials at the Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Erlangen, Germany
- P.2424 Nanoengineered electrospun fibres and fibre reinforced PTMC composite
Xi Zhang, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- P.2426 Leveraging heat shock protein analogues to induce the expression of Interleukin 10. Smart design of emerging anti-inflammatory biomaterials
Yishan Zheng, School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, United Kingdom
- P.2428 A genetic and modular design strategy towards multi-functional and self-assembling underwater adhesives
Chao Zhong, ShanghaiTech University, Shanghai, P.R. China
- P.2430 Construction of surface HA/TiO₂ double bioactive coating on porous titanium and evaluation for its biological performance
Xiangdong Zhu, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- P.2432 Impressive toughness of biodegradable poly(lactides) by addition of polydopamine coated radiopaque particles
Ester Zuza, Mining and Metallurgy Engineering and Materials Science, University of the Basque Country, Bilbao, Spain

15:00 - 16:30

220bcd (P2)

Poster Session 2B

Functional materials

- P.2434 Interaction of functionalized PEG-PLA/PLGA nanoparticles with serum proteins and impact on nanoparticle stability and cell toxicity
Kathrin I Abstiens, Pharmaceutical Technology, University of Regensburg, Regensburg, Germany
- P.2436 Carbon nanotubes embedded in embryoid bodies direct cardiac differentiation
Samad Ahadian, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2438 starPEG-heparin hydrogels can be functionalized with TGF β^2 and support human dermal fibroblast growth and differentiation
Ulf Anderegg, Department of Dermatology, Leipzig University, Leipzig, Germany
- P.2440 Effect of extracellular matrix protein adsorption on cell attachment and morphology on poly(MEO2MA-co-OEGMA) polymer substrates with variable composition
Christopher R Anderson, Chemical and Biomolecular Engineering, Lafayette College, Easton, PA, United States
- P.2442 Antimicrobial performance of Mesoporous titania thin films- Role of pore size and antibiotic release
Saba Atefyekta, Chemistry and Chemical engineering, Chalmers University of Technology, Gothenburg, Sweden
- P.2444 Synthesis and photophysical properties of POSS-cored multiporphyrin arrays as singlet oxygen generator
Myung-Seok Choi, Konkuk University, Seoul, Korea
- P.2446 The development of the nanoparticles combined with growth factors as the delivery system
Chen Yu Chu, State Key Laboratory of Oral Disease, West China Hospital of Stomatology Sichuan University, Chengdu, P.R. China
- P.2448 Multivalent DNA aptamers as potent inhibitors of L-selectin mediated lymphocyte rolling
Jens Dermedde, Institute of Laboratory Medicine, Charité - Universitätsmedizin Berlin, Berlin, Germany

- P.2450 Low shear, continuous flow biofilm reactor for testing anti-infective wound care materials: Recent prototype validation with chlorhexidine nanoparticles in alginate films
Peter F Duckworth, Advanced Composites Centre for Innovation and Science (ACCIS), University of Bristol, Bristol, United Kingdom
- P.2452 Toxicity, uptake and transport of antimicrobial chlorhexidine-based nanoparticles for functionalising central venous catheters
Helena J Grady, School of Oral and Dental Sciences, University of Bristol, Bristol, United Kingdom
- P.2454 Nanosilver loaded biodegradable Methacrylated Gelatin hydrogel for coating of biomedical implants with sustained antibacterial properties
Anwarul Hasan, Biomedical Engineering and Department of Mechanical Engineering, American University of Beirut, Beirut, Lebanon N/A
- P.2456 Fabrication of novel hybrid carbon nanotube-alginate hydrogels for applications in cancer research
Binata Joddar, Biomedical Engineering, University of Texas at El Paso, El Paso, United States
- P.2458 Synthetic peptides derived from the sweetness loops of the sweet-tasting proteins
Kwang Hoon Kong, Department of Chemistry, College of Natural Sciences, Chung-Ang University, Seoul, Korea
- P.2460 Preparation of magnetic nanoclusters for efficient selective protein adsorption
Fang Lan, Sichuan University, Chengdu, P.R. China
- P.2462 Compatibility of PEG-containing siloxane materials by metal-free click-chemistry
Frances Lasowski II, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.2464 Development of blood carrier's material by using the phospholipid polymer with polyolefin
Go-Eun Lee, Nano Bio Material Lab, Sung Kyun Kwan University, Seoul, Korea
- P.2466 Phagocytic ability of macrophages cultured on nanostructured glassy films
Sara Makaremi, Biomedical Engineering, McMaster University, Richmond Hill, ON, Canada
- P.2468 Exploring non-peptidic integrin antagonists as surface coating molecules: novel solutions from molecular chemistry to harness cell-surface interactions
Carles Mas-Moruno, Biomaterials, Biomechanics and Tissue Engineering, Universitat Politècnica de Catalunya, Barcelona, Spain
- P.2470 Polyvinyl alcohol/carboxyethyl chitosan membranes for cardiovascular applications: Hemocompatibility and in vivo integration study
Mircea A Mateescu, Department of Chemistry, Université du Québec à Montréal, Montreal, QC, Canada
- P.2472 Ultra high throughput selection of enzyme by Terahertz Chemical Microscope
Sharifun Nahar, Energy Science and Materials, Institut national de la recherche scientifique (INRS-EMT), Varennes, QC, Canada

- P.2474 Novel photoreactive phospholipid polymers for preparing a stable biocompatible surface with a smart process
Tomozumi Noda, Life Science Products Division, NOF Corporation, Kawasaki, Japan
- P.2476 Evaluation of in situ chondroitin sulfate-gelatin hydrogel synthesized by click chemistry
Insup Noh, Department of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology, Seoul, Korea
- P.2478 Synthesis of new biocompatible peptide-functionalized hyperbranched polymers
Al Halifa Soutan, Materials Department, University of Leuven (KU Leuven), Leuven, Belgium
- P.2480 Preparation of magnetic porous Fe₃O₄/histidine nanoclusters for effective protein adsorption
Qi Yang, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, P.R. China
- P.2482 Temperature-sensitive antimicrobial surface Si-AMP prepared through ATRP technology and click chemistry
Jiezhao Zhan, South China University of Technology, Guangzhou, P.R. China
- P.2484 Novel formulation of poly(glycerol sebacate) and gelatin hydrogel without the use of crosslinkers
Kayla Wroblecky

15:00 - 16:30

220bcd (P3)

Poster Session 2B

Tissue engineering and regenerative medicine

- P.2502 Dual growth factor loaded bioactive injection material for the enhanced treatment of glottal insufficiency
Hee-Jin Ahn, Department of Otorhinolaryngology, Head and Neck Surgery, Seoul National University Hospital, Seoul, Korea
- P.2504 Characterization of Hydroxyapatite-coated bio-mimetic bacterial cellulose scaffold for bone tissue regeneration
Sung-Jun Ahn, Research Division for Industry & Environment, Korea Atomic Energy Research Institute, Daejeon, Korea
- P.2506 Degradation and bioactivity studies of drug loaded porous scaffolds for bone regeneration applications
Vikas Anand, Department of Physics, Guru Nanak Dev University, Amritsar, India
- P.2508 Phosphate glass fibrous scaffolds: tailoring of the properties and improvement of the bioactivity through the incorporation of mesoporous glasses
Alessandra Bari, Department of Applied Science and Technology (DISAT), Politecnico di Torino, Torino, Italy
- P.2510 Decellularized matrices enriched with antibiotics: a promising engineering approach for tissue regeneration
Luca Fusaro, Health Science Department, Università del Piemonte Orientale, Novara, Italy
- P.2512 Cartilage regeneration after spheroid-based autologous chondrocyte implantation (ACI) : structural re-evaluation in second-look biopsies in five patients
Charles James Kirkpatrick, Institute of Pathology, University Medical Center Mainz, Mainz, Germany

- P.2514 Graded elastic modulus orthopedic implants made of graded metastable beta ti alloy
Rubens Caram Jr, School of Mechanical Engineering, University of Campinas, Campinas, Brazil
- P.2516 Effect of bone regeneration of CMC- and HA-based bone grafts in rabbits.
Seok Hwa Choi, Department of Veterinary Surgery, Chungbuk National University, Cheongju, Korea
- P.2518 Comparison between physical and chemical preservation methods for decellularized porcine tissue
Deepak Choudhury, Bio-Manufacturing Programme, Singapore Institute Of Manufacturing Technology- A Star, Singapore, Singapore
- P.2520 The inflammatory response to hypoxic tissue engineered modules
Nicholas D Cober, Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada
- P.2522 Production of a hydrogel-based ex vivo model for osteochondral repair
Megan E Cooke, Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- P.2524 Versatile biomaterials as synthetic extracellular matrices based on a single supramolecular motif: from hydrogels to thermoplastic elastomers
Patricia YW Dankers, Institute for Complex Molecular Systems, Eindhoven University of Technology, Eindhoven, Netherlands
- P.2526 Development of an "off-the-shelf" implantable and absorbable electrospun polycaprolactone-chitosan (PCL-CS) device to regenerate damaged esophageal tissue
Derek C Dashti, Bioinnovation, Tulane University, San Diego, CA, United States
- P.2528 A dual crosslinking strategy for reinforcing gelatine-methacrylamide hydrogels for tissue repair
Mylene De Ruijter, Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.2530 Effect of degradation of poly(epsilon-caprolactone) films on functional properties for tissue engineering bioreactors
Nazely Diban, Chemical and Biomolecular Engineering, Universidad de Cantabria, Santander, Spain
- P.2532 PLGA microcarrier as an injectable scaffold for NT-3 overexpressing bone marrow stem cells: a potential tool for treatment of Parkinson's disease
Shahab Faghihi, National Institute of Genetic Engineering and Biotechnology, Tehran, QC, Canada
- P.2534 Combining induced pluripotent stem cells and nanofilms to generate human arterial and venous endothelial patches
Lino S Ferreira, Center of Neurosciences and Cell Biology, Coimbra, Portugal
- P.2536 Vascularization of engineered tissues using capillary morphogenesis and endothelialized microchannels within fibrin-collagen co-gels
Ross E Fitzsimmons, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2538 Novel bio-inspired synthetic composite materials as promising scaffolds for stem cell-mediated tissue regeneration supporting short term self-renewal of Human Pluripotent Stem Cells in feeder-free culture conditions
Maria Letizia Focarete, Department of Chemistry "Ciamician", University of Bologna, Bologna, Italy
- P.2540 Enhanced functionality of supramolecular UPy materials using UPy guest molecules
Peter-Paul KH Fransen, Eindhoven University of Technology, Eindhoven, Netherlands
- P.2542 Tumor tissue growth within upper and lower, nanofibrous scaffolding constraints
Kenneth T Gan, Stevens Institute of Technology, Hoboken, NJ, United States
- P.2544 Study of electrical conductivity of collagen I, chitosan and blends supported on carbon fibers for biomedical applications
Giovana M Genevro, Departamento de Engenharia de Materiais e Bioprocessors (DEMBio), University of Campinas, Campinas, Brazil
- P.2546 Advanced tissue engineering scaffolds for postoperative cancer patients
Lin Guo, Mechanical Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- P.2548 Tranilast attenuate the fibrosis and re-stenosis after trachea scaffold implantation
Mi-Jung Han, Seoul national university, Seoul, Korea
- P.2550 An investigation of breast cancer bone metastasis in a 3D dense collagen hydrogel culture
Mark James-Bhasin, Department of Mining and Materials Engineering, McGill University, Montreal, QC, Canada
- P.2552 Structural and degradation studies of 1, 6-diisocyanatohexane-extended poly(1, 4-butylene succinate) - bioactive glass scaffolds for bone tissue repair applications
Kulwinder Kaur, Physics, Guru Nanak Dev University, Amritsar, India
- P.2554 Bone augmentation in sinus floor elevation by octacalcium phosphate collagen composite
Tadashi Kawai, Oral and Maxillofacial Surgery, Tohoku University, Graduate School of Dentistry, Sendai, Japan
- P.2556 Chitosan/hyaluronic acid porous scaffold for bone tissue engineering
Halima H Kerdjoudj, Odontology, University of Reims, Reims, France
- P.2558 Two Novel Collagen Based Dura Repair Membranes: Solutions for the Multifaceted Needs in Duraplasty Part I: Development and In Vitro Characterization
Natsuyo S Lee, Research and Development, Collagen Matrix, Inc., Oakland, NJ, United States
- P.2560 Finding the optimal concentration of gelatin-methacrylamide and gellan gum for cartilage biofabrication
Riccardo Levato, Department of Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.2562 Rheological properties and 3D printability of alginate-based hydrogels for biofabrication
Lin Li, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, Singapore

- P.2564 A comparison between electrospinning and rotary jet spinning techniques to obtain core-shell fibers for tissue engineering
Mirian M Machado De Paula, Laboratory of Biomedical nanotechnology, Universidade do Vale do Paraiba (UNIVAP), Hortolandia, Brazil
- P.2566 Biofabrication of perfusable liver constructs
Jos Malda, Orthopaedics, University Medical Center Utrecht, Utrecht, Netherlands
- P.2568 A flexible free-standing conductive polypyrrole membrane with asymmetric surface structures for biomedical application
Jifu Mao, University Laval, Quebec, QC, Canada
- P.2570 A new oligourethane-crosslinked biologic mesh for abdominal wall tissue reconstruction
Birzabith Mendoza-Novelo, Chemical, Electronics and Biomedical Engineering, Universidad de Guanajuato, León, Mexico
- P.2572 Fabrication of nano-composite/nano fibrous graded scaffolds for osteochondral tissue regeneration
Hamid Mirzadeh, Amirkabir University of Technology, Tehran, Iran (Islamic Republic of)
- P.2574 Ultra-short self-assembled beta-peptide hydrogels as matrices for neural tissue engineering
Sepideh Motamed, Materials Science and Engineering Department, Monash University, Melbourne, Australia
- P.2576 Experimental analysis of cell-type dependent functionality change after growing them within microfluidic device in dynamic condition like flow of fluid
Sharmistha Naskar, Centre for Biosystems Science and Engineering (BSSE), Indian Institute of Science, Bangalore, India
- P.2578 Use of cryopreserved human umbilical vein for revascularization in critical lower limb ischaemia
Laura Nicolai, Vascular Surgery Unit, Treviso, Italy
- P.2580 Microencapsulation and bioactivity of mechano growth factor E peptide
Xufeng Niu, School of Biological Science and Medical Engineering, Beihang University, Beijing, P.R. China
- P.2582 Development of porous nano/microfibrous layered skin regenerating scaffold supporting human skin equivalent formation
Pallabi Pal, Indian Institute of Technology, Kharagpur, India
- P.2584 Gold Nanoparticles Promote Chondrogenic Differentiation of ATDC5 Cells
Ting Pan, South China University of Technology, Guangzhou, P.R. China
- P.2586 Early detection of structural abnormalities and cytoplasmic accumulation of TDP-43 in tissue-engineered skins derived from ALS patients
Bastien Paré, Centre de recherche en organogénèse expérimentale de l'Université Laval, LOEX, Québec, QC, Canada
- P.2588 Chitosan nanoparticle/poly(lactide-co-glycolide) sponge hybrid scaffolds containing bioactive molecules for repair of ionizing radiation damaged tissue
Sang Jun Park, Korea Institute of Radiological & Medical Sciences, Seoul, Korea
- P.2590 In situ formation of cellular hydrogels for regeneration of diseased bowel tissue
Meryem O Pehlivaner, Chemical Engineering, Northeastern University, Allston, MA, United States
- P.2592 Controlling the mechanical microenvironment of human airway epithelial cells for tracheal tissue engineering
James Poon, Institute of Biomaterials & Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2594 Hydromechanical stimulation of chondrocyte-seeded agarose enhances collagen production
Homeyra Pourmohammadali, Department of Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, Canada
- P.2596 Derivation of a human in vitro BBB model from hiPSCs
Catarina Praça, Center for Neuroscience and Cell Biology, Coimbra, Portugal
- P.2598 Antimicrobial ionic liquids in bioactive sol-gel hydroxyapatite for bone tissue engineering
Maria Grazia Raucci, National Research Council of Italy, Institute of Polymers, Composites and Biomaterials (IPCB), Naples, Italy
- P.2600 Tissue spheroids spreading on synthetic electrospun matrices
Rodrigo Alvarenga Rezende, Division of 3D Technologies, Center for Information Technology Renato Archer (CTI), Campinas, Brazil
- P.2602 Gold nanoparticle loaded porcine cholecystic-extracellular matrix: A potential bioscaffold for cardiac tissue engineering.
Reshma Sukumaran Nair, Division of Experimental Pathology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, India
- P.2604 Engineering tissues with a perfusable vessel-like network by assembling endothelialized alginate hydrogel fiber and spheroid-enclosing microcapsules
Shinji Sakai, Materials Engineering Science, Osaka University, Toyonaka, Japan
- P.2606 Vascular remodeling of a novel absorbable polymeric conduit in the ovine pulmonary circulation
Frederick J Schoen, Pathology, Brigham and Women's Hospital, Boston, United States
- P.2608 MRI evaluation of spinal cord lesions injected with a gelatin-based matrix in a rat model
Adhvait M Shah, Health, Science and Technology, Massachusetts Institute of Technology, Burlington, MA, United States
- P.2610 An in-situ glucose-stimulated insulin release assay under perfusion bioreactor conditions
Jamie Robert Sharp, Département de génie chimique et de génie biotechnologique, Université de Sherbrooke, Sherbrooke, QC, Canada
- P.2612 Construction of the arterial blood vessel model by Layer-by-Layer technique and its potential application for regenerative medicine
Fumiaki Shima, Graduate School of Frontier Biosciences, Osaka University, Suita, Japan
- P.2614 Electrospun nanofiber matrices of blended and modified polycaprolactone in cell culture experiments for ocular surface regeneration
Piotr Stafiej, Department of Ophthalmology, Universitätsklinikum Erlangen, Erlangen, Germany

- P.2616 Polymer hydrogel microspheres as building blocks for extracellular matrices
Harald Stöver, Chemistry and Chemical Biology, McMaster University, Hamilton, ON, Canada
- P.2618 Electroactive biomaterials for drug delivery and tissue engineering
Ghazal Tadayyon, CURAM, National University of Ireland, Galway, Ireland
- P.2620 Development of photodegradable gelatin hydrogels and image analysis technique for automatic optical cell separation system based on the cellular morphology in embedding culture
Masato Tamura, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan
- P.2622 Effect of filler type on mechanical and biological properties of electrospun PLA used for bone tissue applications
Elizabeth KE Tanner, School of Engineering, University of Glasgow, Glasgow, United Kingdom
- P.2624 Synthesis of novel pH- and temperature-controlled composite hydrogels for tissue engineering
Atsadaporn Thangprasert, Faculty of Medicine, Institute of Biomedical Engineering, Hat Yai, Thailand
- P.2626 Osteoblast responses of Poly (octanediol citrate)/Gallium-containing bioglass composite scaffolds
Mark Towler, Mechanical & Industrial Engineering, Ryerson University, Toronto, Canada
- P.2628 Development of a biomaterials-based functional epithelial graft for tracheal regeneration
Ratna Varma, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada
- P.2630 Multi-doped hydroxyapatite within porous poly(L-lactide-co-D,L-lactide): functional biomaterials for bone tissue engineering
Marija Vukomanović, Advanced Materials Department, Jožef Stefan Institute, Ljubljana, Slovenia
- P.2632 In vitro biodegradation of e-spun mesh based on supramolecular UPy chemistry
Radoslaw A Wach, Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland
- P.2634 A small diameter silk fibroin tubular scaffold for artificial blood vessel
Jiannan Wang, Soochow University, Suzhou, P.R. China
- P.2636 Preparation, characterization, and blood compatibility of polyurethanes derived from aliphatic diisocyanates and polycarbonate urethane
Xinyu Wang, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Biomedical Materials and Engineering Research Center of Hubei Province, Wuhan, Wuhan, P.R. China
- P.2638 Encapsulation of scaffolds in hydrogel beads with mesenchymal stem cells for rabbit calvarial bone defect repair
Feng Wen, School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore, Singapore
- P.2640 Effects of compressive loading on the mechanical properties of stem cell-based self-assembled tissues (scSATs)
Masashi Yamazaki, Tokyo Metropolitan University, Hino, Japan

- P.2642 The effects of silicate/phosphate biphasic material on the osteogenic differentiation of human mesenchymal stem cells (hMSCs)
Jingzhou Yang, Harvard Medical School, Cambridge, MA, United States
- P.2644 Myogenesis of infrapatellar fat pad derived adipose stem cells in fibrin fibers
Pinar Yilgor Huri, Biomedical Engineering, Ankara University, Ankara, Turkey
- P.2646 Glass wool as a model scaffold for 3D culture of uterine smooth muscle cells
Roger C Young, School of Medicine and Public Health, University of Newcastle, Memphis, TN, United States
- P.2648 Fabrication of aligned structure tissue engineering scaffold by electrospinning using magnetic field
Lei Zhang, Department of Mechanical Engineering, Tsinghua University, Beijing, P.R. China
- P.2650 Regeneration of full size teeth using decellularized tooth bud scaffolds
Weibo Zhang, Tufts University, Boston, MA, United States

15:00 - 16:30

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Poster Session 2B

Biomaterials and host response

- P.2672 Evaluation of cell viability of biodegradable AZ31 Mg alloy for use in paediatric tracheal stent after long term in vitro corrosion
Isaiah IA Adekanmbi, School of Engineering, Glasgow University, Glasgow, United Kingdom
- P.2674 The immobilization and activity of Chrysopepsin-1 antimicrobial peptide onto catheter surfaces
Todd E Alexander, Worcester Polytechnic Institute, Worcester, MA, United States
- P.2676 Bi-layer silk fibroin grafts support functional tissue regeneration in a porcine model of onlay esophagoplasty
Khalid Algarrahi, Urology, Boston Children's Hospital / Harvard Medical School, Boston, MA, United States
- P.2678 In-vivo comparison of chemically polished vs. unpolished magnesium-based screws in ovine tibiae
Leopold Berger, TU Wien, Wien, Austria
- P.2680 Microporous β -tricalcium phosphate (TCP)
Anke Bernstein, Department of surgery, clinic of orthopedics and trauma surgery, University of Freiburg, Freiburg, Germany
- P.2682 Serine protease inhibition attenuates Foreign Body Giant Cell formation
Louise Carson, School of Pharmacy, Queen's University Belfast, Belfast, United Kingdom

- P.2684 Challenges in post-mortem preparation of orthopedic implanted devices
Madeleine Chagnon, Pathology, AccelLAB Inc., Boisbriand, QC, Canada
- P.2686 Antibiofilm strategies for combating invasive disease caused by filamentous fungi
Bryan R Coad, Future Industries Institute, University of South Australia, Mawson Lakes, Australia
- P.2688 Gallium as novel anti-bacterial and pro-osteointegrative agent for orthopedic devices: an in vitro and in vivo study
Andrea Cochis, Department of Health Sciences, University of Piemonte Orientale "UPO", Novara, Italy
- P.2690 A stability library of silver and gold nanostructures for applications in biomedicine
Hasitha De Alwis Weerasekera, Department of Chemistry and Centre for Catalysis Research and Innovation, University of Ottawa, Ottawa, ON, Canada
- P.2692 Novel platform technology to allow direct grafting of antimicrobial agents onto implantable metals.
Felicity J De Cogan, Clinical and Experimental Medicine, University of Birmingham, Edgbaston, United Kingdom
- P.2694 Cathodic voltage controlled electrical stimulation as treatment for eradication of *Acinetobacter baumannii* device related infection
Mark T Ehrensberger, Biomedical Engineering, State University of New York at Buffalo, Buffalo, NY, United States
- P.2696 Pre-clinical characterization of RE-free bioresorbable magnesium screws in a growing sheep model
Johannes Eichler, Department of Orthopaedic Surgery, Medical University of Graz, Graz, Austria
- P.2698 Harnessing the multifunctionality in nature: a bioactive agent release system with self-antimicrobial and immunomodulatory properties
Nihal Engin Vrana, Protip Medical, Strasbourg, France
- P.2700 Preclinical evaluation of collagen type I scaffolds that include gelatin-collagen microparticles and are loaded with an aqueous Aloe vera extract in a rodent model of full-thickness skin wound
Liliana Gil, Tissue Engineering Group, Universidad Nacional de Colombia, Bogotá, Colombia
- P.2702 Study on water permeability of vascular grafts and its testing equipment
Guoping Guan, College of textiles, Donghua University, Shanghai, P.R. China
- P.2704 Biocompatibility and cellular uptake mechanisms of poly(N-isopropylacrylamide) in different cells
Zhong Guo, Jinan University, Guangzhou, P.R. China N/A
- P.2706 HL-60 cell response to PMMA surfaces of different chemistry and roughness with a focus on extracellular traps
Fairuz Hoque, Department of Chemical Engineering, Queen's University, Kingston, ON, Canada
- P.2708 Fibronectin adsorption on surface modified polyetherurethanes for blood-contacting applications
Ludvine Hugoni, Department of Mining, Metallurgical and Materials Engineering & University Hospital Research Center, Laboratory for Biomaterials and Bioengineering (CRC I), Québec City, QC, Canada
- P.2710 Animal study of consecutive CT monitoring of biodegradable materials - biodegradation of pure Mg implanted in rabbit femur
Akane Ishikawa, Dept. of Materials Science and Engineering, Meijo University, Nagoya, Japan
- P.2712 Toxicity and oxidative stress of nano- and micro-CoCrMo particles
Bingyun Li, Orthopaedics, West Virginia University School of Medicine, Morgantown, WV, United States
- P.2714 Studies of surface modification of titanium with novel copolymer containing both carboxyl and phosphonic acid functionalities
Jui-Che Lin, Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan
- P.2716 pH-sensitive release of silver nanoparticles from titanium dioxide nanotubes array
Jinsong Liu, School and Hospital of Stomatology, School and Hospital of Stomatology, Wenzhou Medical University, Wenzhou, P.R. China
- P.2718 The effect of lanthanum oxide and gallium oxide on the biocompatibility of high borate glasses
Kathleen J O'connell, Department of Biological Sciences, Cork Institute of Technology, Cork, Ireland
- P.2720 Using photodynamic therapy to combat bacterial biofilms and reduce infection on orthopaedic implants.
Catherine J Pendegrass, Biomedical Engineering, University College London, Middlesex, United Kingdom
- P.2722 Trojan-Like Internalization of titanium dioxide nanoparticles by bone Cells
Luis A Rocha, Departamento de Física, Universidade Estadual Paulista (UNESP), Faculdade de Ciências de Bauru, Bauru, Brazil
- P.2724 Examination of the foreign body giant cell response following implantation of biodegradable materials in rats
Michael Schlosser, Department of Medical Biochemistry and Molecular Biology, University Medical Center Greifswald, Karlsburg, Germany
- P.2726 Origin of oxidative stress in cells exposed to dental resin monomers
Helmut Schweikl, Department of Operative Dentistry and Periodontology, University Hospital Regensburg, Regensburg, Germany
- P.2728 Improvement of hemostatic function by natural substance in cooperation with recombinant batroxobin
Gyeong Mi Seon, Department of Medical Engineering, Yonsei University of College Medicine, Seoul, Korea
- P.2730 A carboxy-methyl cellulose carrier reduces bone formation within a silicate-substituted calcium phosphate scaffold
Shirin Shahbazi, Biomedical Engineering, University College London, Middlesex, United Kingdom
- P.2732 Towards application as reinforcing agents in bone tissue engineering: cytocompatibility of inorganic dichalcogenides molybdenum disulfide nanoplatelets and tungsten disulfide nanotubes
Balaji Sitharaman, Biomedical Engineering, Stony Brook University, Stony Brook, NY, United States

- P.2734 Bacterial evaluation after Chlorhexidine treated TiCP and Ti7,5Mo surface for biological application.
Marisa Aparecida Souza, Department of Materials and Technology, Universidade Estadual Paulista (UNESP), Guaratinguetá, Brazil
- P.2736 Animal study on in-vivo galvanic corrosion of SUS316L vs Ti-6Al-4V 2 years results with EDX and EPMA elemental analyses
Jun Tamura, Department of Materials Science and Engineering, Meijo University, Nagoya, Japan
- P.2738 Immune tunable and chondrogenic the two side of the same biomaterial.
Ennio Tasciotti, Regenerative Medicine, Houston Methodist Research Institute, Houston, TX, United States
- P.2740 Fabrication of porous carbonate apatite based on the bridging of calcite granules followed by the phase transformation to carbonate apatite
Kanji Tsuru, Department of Biomaterials, Kyushu University, Fukuoka, Japan
- P.2742 Manganese ferrite graphene nanohybrid synthesis and the investigation of its antibacterial properties
Natalia Ueda Yamaguchi, Universidade Estadual de Maringá / UNICESUMAR, Maringá, Brazil
- P.2744 A synergistic anti-bacterial effect with cold atmospheric plasma (cap) and silver antibiotic nanoparticles
Mian Wang, Northeastern University, Boston, MA, United States
- P.2746 Formulation and characterization of novel antimicrobial denture base materials
Xiaoming Xu, Division of Biomaterials, Louisiana State University Health-New Orleans, School of Dentistry, New Orleans, LA, United States
- P.2748 Pathology of permanent, LAD-ligation induced myocardial infarction differs across small (mice, rat) and large (pig) animal models.
Chris YT Yen, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan
- P.2756 Automated and highly controllable 3D near-field electrospinning of polymeric microfibers with potential for tissue engineering applications
Justin L Brown, Biomedical Engineering, The Pennsylvania State University, University Park, PA, United States
- P.2758 Preservation of nanofiber morphology in EDC cross-linking of electrospun gelatin
Chiara Emma Campiglio, Material Engineering, Politecnico di Milano, Milan, Italy
- P.2760 Laser micro-polished stainless steel surfaces with improved bacteria removal capability
Ali Gökhan Demir, Department of Mechanical Engineering, Politecnico di Milano, Milan, Italy
- P.2762 In vivo regeneration of complex cartilage/bone defect using biomimetic scaffolds
Yingying Du, Advanced Biomaterials and Tissue Engineering Center, Huazhong University of Science and Technology, Wuhan, P.R. China
- P.2764 Effect of sterilization on drugs and lenses for ophthalmic applications
Raquel SC Galante, Pharmacy, Faculdade de Ciências Farmacêuticas, São Paulo, Brazil
- P.2766 Interactions of zoledronate and alendronate with hydroxyapatite and octacalciumphosphate
Massimo Gazzano, The Institute of Organic Synthesis and Photoreactivity (ISOF), National Research Council of Italy (CNR), Bologna, Italy
- P.2768 Low-cost fabrication of a glucose microbiosensor
Mathieu Hautefeuille, Facultad de Ciencias, Universidad Nacional Autónoma de México, México, México
- P.2770 Self-assembly of bioactive silk to integrate cells into a 3D scaffold
My Hedhammar, Protein Technology, Royal Institute of Technology, Stockholm, Sweden
- P.2772 Decellularized cell sheet constructs for periodontal regeneration
Sašo Ivanovski, School of Dentistry and Oral Health, Menzies Health Institute Queensland, Griffith University, Griffith, Australia
- P.2774 Fabrication and characterization of photo- and plasma-chemically deposited thiol-terminated films for biomedical applications
Evelyne Kasperek, Chemical Engineering, McGill University, Montreal, QC, Canada
- P.2776 Electrospun fibers covering of small-diameter decellularized vascular graft for compliance matching
Tsuyoshi Kimura, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Tokyo, Japan
- P.2778 Construction of in situ cell separation system by visible light irradiation
Chie Kojima, Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, Sakai, Japan
- P.2780 Biofabrication of hydrogel based "bio-resins" via high resolution digital light processing
Khoon S Lim, Christchurch Regenerative Medicine and Tissue Engineering Group, University of Otago, Christchurch, New Zealand

15:00 - 16:30

220bcd (P4)

Poster Session 2B**Innovation in fabrication**

- P.2750 The surface proteomic signature of a biomaterial determines its interaction with epithelial cells
Mohamed Nur Abdallah, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- P.2752 Characterization of alloys produced with new system for processing dental prosthesis
Omar Alageel, Faculty of Dentistry, McGill University, Montreal, QC, Canada
- P.2754 Fabrication of uniform calcium alginate gel particles with low-cost widely available ink-jet printer system
Bauyrzhan M Askarov, Chemical Engineering, University of Birmingham, Birmingham, United Kingdom

- P.2782 Poly(vinyl alcohol) based hydrogels for 3D biomaterial constructs
Markus Lunzer, Institute of Applied Synthetic Chemistry, Vienna University of Technology, Vienna, Austria
- P.2784 Microfibrillar PEDOT scaffold for neural recordings
Jason B Marroquin, Materials Engineering, Monash University, Clayton, Australia
- P.2786 Temporal properties of singular and multiple fiber population electrospun fabrics
Seth D McCullen, Poly-Med, Inc., Anderson, SC, United States
- P.2788 Glow-discharge radio frequency plasma α -polyether and fluoropolyether coated substrates prevent IgG protein adsorption
Marvin M Mecwan, Bioengineering, University of Washington, Seattle, WA, United States
- P.2790 Nitrogen-doped carbon nanotube and alginate composite hydrogel as 3D bioprinting inks
Jose Gil Munguia Lopez, Department of Bioengineering, McGill University, Montreal, QC, Canada
- P.2792 BioBot 1 BioPrinter: A perfect balance between versatility and accessibility
Timothy R Olsen, BioBots, Philadelphia, PA, United States
- P.2794 Chitosan electrospun nanofibres for Ciprofloxacin controlled release
Safa Ouerghemmi, UMET, University of Lille, Villeneuve d'Ascq, France
- P.2796 Plasma surface modification of coronary stents for improving endothelialization and anticoagulation
Jun Pan, Bioengineering College, Chongqing University, Chongqing, P.R. China
- P.2798 Cross linking of protein nanofibers and tissues using Riboflavin nanoformulations
Sridhar Radhakrishnan, Cancer Science Institute of Singapore, Singapore, Singapore
- P.2800 Development of bi-layer vascular constructs by Combining Polymer Biomaterial and Cellular Self assembly
Giridhar Raghunathan, CMDGT/Laboratoire d'Organogénèse Expérimentale (LOEX), Laval University, Québec, QC, Canada
- P.2802 Atmospheric-pressure and low-pressure plasma amination of stent alloy for bioactive protein immobilization
Charlotte Rasser, Institut National de la Santé et de la Recherche Médicale (INSERM) U1148, Paris Cedex 18, France
- P.2804 Porous scaffolds of poly (3-hydroxybutyrate) fabricated by Selective Laser Sintering Technology (SLS) for bone engineering
Jorge Vicente Lopes Silva, 3D Technologies, Renato Archer Center for Information Technology, Campinas, Brazil
- P.2806 3D printed open-pore Ti6Al4V construct promotes interfacial tissue maturation and retains a higher density of less aged osteocytes
Furqan A Shah, University of Gothenburg, Gothenburg, Sweden
- P.2808 Three-dimensional phase separation for the manufacture of elastomer scaffolds in soft tissue engineering
Wenhui Song, Division of Surgery and Interventional Science, University College London, London, United Kingdom

- P.2810 Direct selective laser melting of Hydroxyapatite without using binder
Shihai Sun, Division of Materials & Manufacturing Science, Graduate School of Engineering, Osaka University, Osaka, Japan
- P.2812 Powder metallurgical processing of iron for biodegradable medical implants: Physical and mechanical
André Carvalho Tavares, LdTM/ UFRGS, University of Rio Grande Do Sul, Porto Alegre, Brazil
- P.2814 Fabrication of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) fibres for tissue engineering using Forcespinning™
Sarah J Upson, School of Mechanical and Systems Engineering, Newcastle University, Newcastle Upon Tyne, United Kingdom
- P.2816 Additive manufacturing of 3D gelatin scaffolds: direct versus indirect printing
Sandra Van Vlierberghe, Polymer Chemistry & Biomaterials Group, Ghent University, Ghent, Belgium
- P.2818 Two-dimensional arrays of cell-laden polymer hydrogel modules
Yihe Wang, Chemistry, University of Toronto, Toronto, ON, Canada
- P.2820 Melt electrospinning writing of high-strength polymers for the 3D printing of ligaments
Gernot Hochleitner, Department for functional materials in medicine and dentistry, University of Würzburg, Würzburg, Germany

15:00 - 16:30

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Poster Session 2B

Mechanics and modeling biomaterials science and engineering

- P.2852 Design optimization of tissue scaffolds for biotransport criteria
Qing Li, School of Aerospace, Mechanical and Mechatronic Engineering, University of Sydney, Sydney, Australia
- P.2854 Designing pathogen resistant polymers for implantable devices using machine learning
Paulius Mikulskis, School of Pharmacy, The University of Nottingham, Nottingham, United Kingdom
- P.2856 Study of titanium-zirconium nanotubes on commercially available roxolid implant
Tolou TS Shokuhfar, Bioengineering, University of Illinois at Chicago, Chicago, IL, United States

15:00 - 16:30

220bcd (P5)

Poster Session 2B

Surfaces and interfaces

- P.2858 Bioactivity of Na₂O-CaO-SiO₂-P₂O₅-Nb₂O₅-based glasses: in vitro evaluation
Celso A Bertran, Chemistry Institute/ Physical Chemistry Department, University of Campinas, Campinas, Brazil

- P.2860 Precise targeting of pediatric brain tumors using chain-like nanoparticles
Peter A Bielecki, Biomedical Engineering Dept., Case Western Reserve University, Cleveland Heights, OH, United States
- P.2862 3D printed microfluidics for blood filtration
Stanley E R Bilatto, Chemistry Department, Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.2864 DCPD-alginate composites: a bioactive material for bone tissue engineering
Sindre H Bjørnøy, Department of Physics, Norwegian University of Science and Technology, NTNU, Trondheim, Norway
- P.2866 Chemical aspects of cell adhesion and -growth for vascular grafts
Gaël Boespflug, Génie Biomédical, École Polytechnique de Montréal, Montréal, QC, Canada
- P.2868 Electrochemical behavior of titanium modified with TiO₂ nanotubes
Carolina C Bortolan, Department of Materials Engineering (DEMA), Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.2870 A universal aqueous-based antifouling coating for multi-material devices
John Brash, Biomedical Engineering, McMaster University, Hamilton, ON, Canada
- P.2872 Moisture permeability rates in various biofilms
Daniel J Burnett, Surface Measurement Systems, Ltd., Allentown, PA, United States
- P.2876 The anti-tumor effect of lefty gene-loaded hydroxyapatite nanoparticles on breast cancer cells
Cen Chen, Zhejiang Sci-Tech University, Hangzhou, P.R. China
- P.2878 Bioelectronic, stretchable devices interfacing with the human body
Fabio Cicoira, Chemical Engineering, Polytechnique Montréal, Montréal, QC, Canada
- P.2880 Shearing as a mechanism for lamina splendens formation
Sierra G Cook, Materials Science, Cornell University, Ithaca, NY, United States
- P.2882 Lipoprotein interactions with blood contacting biomaterials
Rena M Cornelius, Chemical Engineering, McMaster University, Hamilton, ON, Canada
- P.2884 Investigating mineralization in normal and hyperglycemic bone with electron microscopy
Emily Rose Creighton, School of Biomedical Engineering, McMaster University, Hamilton, ON, Canada
- P.2886 Modulating mucin hydration and lubrication by deglycosylation and polyethylene glycol binding
Thomas Crouzier, School of Biotechnology, KTH Royal Institute of Technology, Stockholm, Sweden
- P.2888 Synthesis and Characterization of Mesoporous β^2 -tricalcium phosphate powder by Microemulsion technique
Honglian Dai, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, P.R. China
- P.2890 Nanotechnology-assisted piezoelectrodes for cochlear stimulation
Serena Danti, University of Pisa, Pisa, Italy
- P.2892 A nanopatterning platform to study the mechanisms of nanoscale sensing of focal adhesions
Stefania Di Cio, School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom
- P.2894 Surface modification and bare metal functionalization of cobalt chromium alloys for biomolecule grafting
Sergio Diaz-Rodriguez, Université Laval, Quebec, QC, Canada
- P.2896 Beyond the EPR effect: targeting of nanoparticles to pediatric brain tumors
Elizabeth K Doolittle, Biomedical Engineering, Case Western Reserve University, Cleveland Heights, OH, United States
- P.2898 Improving the Biocompatibility of Intravascular Devices
Marie-Christine Durrieu, Institute of Chemistry & Biology of Membranes and Nanoobjects, Bordeaux University, Bordeaux, France
- P.2900 Bio-inspired superparamagnetic microspheres for bone tissue engineering applications
Tatiana Marisa Fernandes Patricio, Institute of Science and Technology for Ceramics, National Research Institute, Faenza, Italy
- P.2902 Soft and flexible electroactive materials for neuroprosthetic devices
Josef A Goding, Graduate School of Biomedical Engineering, University of New South Wales, Murrumbidgee, Australia
- P.2904 Bioactivity tests in vitro of Ti-Nb alloys
Carlos Roberto Grandini, Physics, Universidade Estadual Paulista (UNESP), Bauru, Brazil
- P.2906 3D and ambient mass spectrometry for imaging and characterisation of medical devices
Felicia M Green, National Physical Laboratory, Teddington, United Kingdom
- P.2908 Calcium-phosphate coatings by electrostatic spray deposition
Laurent Gremillard, Materials, Engineering and Science, INSA-Lyon, Villeurbanne, France
- P.2910 Polymer topology and graft density affect in vitro mineralisation
Lisbeth Grondahl, School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Australia
- P.2912 Functionalized gold nanorod core-mesoporous silica shell nanodevices with controlled release of anticancer drug
Qingwen Guan, Mechanical Engineering, The University of Hong Kong, Hongkong, Hong Kong
- P.2914 Multimodal assesment of the biomechanical properties of the bone-implant interface
Guillaume Haiat, Laboratoire de Modelisation et Stimulation Multi-Echelle, CNRS, Creteil, France
- P.2916 Preparation of Eu³⁺/Gd³⁺ co-doped hydroxyapatite luminescent nanocrystals for cell labelling
Yingchao Han, Wuhan University of Technology, Wuhan, P.R. China
- P.2918 Surface chemistry from wettability and charge for the control of mesenchymal stem cell fate through self-assembled monolayers
Lijing Hao, Guangzhou, P.R. China
- P.2920 Bioactive HAp coatings obtained by HVOF thermal spray using design of experiments
Jennifer A Hermann-Muñoz, Advanced Ceramics Group, Cinvestav Unidad Querétaro, Querétaro, Mexico

- P.2922 Ultrasound-mediated transfer printed hydrogel-based electronics for peripheral nerve interfaces
Wei-Chen Huang, Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States
- P.2924 Self-assembled glycopeptide nanofibers as tunable modulators of lectin bioactivity
Gregory A Hudalla, Biomedical Engineering, University of Florida, Gainesville, FL, United States
- P.2926 X-ray imaging of gold nanoparticle loaded alginate microcapsules
Timothy C Hughes, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clayton South, Australia
- P.2928 A theranostic gemcitabine prodrug with AIE-based intracellular light-up characteristics for selective suppression of pancreatic cancer cells
Jian Ji, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.2930 Assessment of quaternary ammonium compound dendrimer surface treatment on textile materials
Rahim Jindani, Textile Engineering Chemistry and Science, North Carolina State University, Raleigh, NC, United States
- P.2932 Monitoring of metallic biomaterials interaction with model body environment
Ludek Joska, Department of Metals and Corrosion Engineering, University of Chemistry and Technology, Prague, Czech Republic
- P.2934 A Fabrication of colorimetric sensor using pH indicator for determination of toxic gases
Sung Yeol Kim, Polymer science & engineering, Sungkyunkwan University, Suwon, Korea
- P.2936 Incorporation of silver nanoparticles in Ti-7.5mo alloy surface after TiO₂ nanotubes growth
Reginaldo T Konatu, Material and Technology Department, Universidade Estadual Paulista (UNESP), Guaratinguetá, Brazil
- P.2938 Conducting polymer bio-interface for neuroregeneration: poly(3,4-ethylenedioxyppyrrrole)/ibuprofen system
Katarzyna Krukiewicz, Department of Physical Chemistry and Technology of Polymers, Silesian University of Technology, Gliwice, Poland
- P.2940 SpinoMimetic CryoSponges as advanced biomaterial archetypes for enhanced neuronal anchoring and support: Achievement of maximal mechanotransduction via minimal functionalization and crosslinking
Pradeep Kumar, Pharmacy and Pharmacology/Wits Advanced Drug Delivery Platform, University of the Witwatersrand, Johannesburg, South Africa
- P.2942 Surface modification of PEEK for improving osteocompatibility
Shun Kunomura, Graduate School of Science and Engineering, Kansai University, Osaka, Japan
- P.2944 Graphene oxide-bone morphogenic protein2 complex coating by electrophoretic deposition
Eun-Jung Lee, Nanobiomedical Science, Dankook University, Cheonan, Korea
- P.2946 Study of DNA-cationic polymer brush interactions for gene delivery
Danyang Li, School of Engineering and Material Science, Queen Mary University of London, London, United Kingdom
- P.2948 A novel thermosensitive polypeptide hydrogel with encapsulated growth factors for biomedical applications
Ji-Yu Lin, Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan
- P.2950 Experimental data and theoretical modelling on the electrokinetics of porous TiO₂-coatings for body implants
Martina Lorenzetti, Department for Nanostructured Materials, Jožef Stefan Institute, Ljubljana, Slovenia
- P.2952 A new tissue engineered 3D model of gastric mucosa for stomach permeability studies
Bianca N Lourenço, Biomaterials for Multistage Drug & Cell Delivery, Instituto de Engenharia Biomédica (i3S/ INEB), Porto, Portugal
- P.2954 Mechanochemical synthesis of bismuth sulfide nanoparticles for their use as contrast probes in computed tomography imaging
Michael Malca, McGill University, Montreal, QC, Canada
- P.2956 Biomimetic aggrecan solutions show gel-like rheological behavior
Michele S Marcolongo, Materials Science and Engineering, Drexel University, Philadelphia, PA, United States
- P.2958 PEGylation of bisphosphonate-functionalized gold nanoparticles enables improved in vivo performance as a targeted X-ray contrast agent for breast microcalcifications
Tracie L McGinnity, Department of Aerospace and Mechanical Engineering, Bioengineering Graduate Program, University of Notre Dame, Notre Dame, IN, United States
- P.2960 Porosity related mechanical properties and osteoblastic induction response of a-TCP/Hydroxyapatite bone cements
Dionysios E Mouzakis, Mechanical Engineering, Technological Educational Institute of Thessaly, Larisa, Greece
- P.2962 Polyester-based nanoparticles for the controlled release of bioactive coumarinic derivatives
Ines Msolli, Laboratoire de Recherche Vasculaire Translationnelle, Galilée institutin, Saint Denis, France
- P.2964 Bioresorption and bone formation of calcium-phosphate cements with gelatin particles using a pig's tibia model
Kohei Nagata, Department of Applied Chemistry, Meiji University, Kawasaki, Japan
- P.2966 Modular assembly of surface functionalized core-shell nanoparticle probes for multimodal imaging including spectral CT
Prakash D Nallathamby, Multidisciplinary Research Building, Aerospace and Mechanical Engineering, University of Notre Dame, Notre Dame, IN, United States
- P.2968 Antibacterial borosilicate bioactive glasses for bone tissue engineering
Nuno M Neves, 3B's Research Group, University of Minho, Barco GMR, Portugal
- P.2970 Local and systemic analysis of porous iron implantation in femoral bone of rats
Deni Noviana, Division of Surgery and Radiology, Department of Clinic Reproduction and Pathology, Faculty of Veterinary Medicine, Bogor Agricultural University, Jawa Barat, Indonesia

- P.2972 Preparation of chitosan-HAp composite fiber for artificial ligament
Takuma T Okada, Department of Biological Functions Engineering, Kyushu Institute of Technology, Kitakyushu, Japan
- P.2974 Towards optimizing a custom small animal model of partial joint replacement system created via additive manufacturing
Adam DM Paish, Medical Biophysics, Western University Canada, London, ON, Canada
- P.2976 Development of orally available bile acid conjugated nanoparticle using heparin and protamine
Jooho Park, Research Institute of Pharmaceutical Sciences, College of Pharmacy, Seoul National University, Seoul, Korea
- P.2978 A dual-functional peptide probe for simultaneous stem cell monitoring and restoring
Yoon Jeong Park, Department of Dental Regenerative Biotechnology, Oral Biochemistry, School of Dentistry, Seoul National University, Seoul, Korea
- P.2980 Calcium/strontium substituted phosphate based glasses for orthopaedic applications
Uresha Patel, Faculty of Engineering, University of Nottingham, Nottingham, United Kingdom
- P.2982 Surface functionalization through sol-gel dip coating for thiol-mediated cell adhesion
Daniele Pezzoli, Department of Mining, Metallurgical and Materials Engineering and Research Center of St-François d'Assise Hospital, Université Laval, Québec, QC, Canada
- P.2984 Evaluation of TiO₂ nanotubes growth on Ti-Mo alloys for biomedical applications
Ana Paula Rosifini Alves Claro, Materials and Technology Department, UNESP, Guaratigueta, Brazil
- P.2986 Synthesis of MMP sensor microgel for spatial and temporal monitoring of MMP activities
Della S Shin, Chemical and Biological Engineering Department, University of Colorado at Boulder, Boulder, CO, United States
- P.2988 Antibiofilm effect and stem cell viability of bioactive SiO₂-CaO-P2O₅ gel-glass with different silica-content
Renato L Siqueira, PPG-CEM, Programa de Pós-Graduação em Ciência e Engenharia de Materiais, DEMa, Departamento de Engenharia de Materiais, LaMaV, Laboratório de Materiais Vitreos, Universidade Federal de São Carlos (UFSCar), São Carlos, Brazil
- P.2990 Tailored surface-initiated polymerisation to control the chemical and biological response
Katie E Styan, Manufacturing, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Melbourne, Australia
- P.2992 Gelatin-based hydrogels as versatile tools for tissue engineering: insights from multimodal imaging in vivo and ex vivo
Christoph Tondera, Department Radiopharmaceutical and Chemical Biology, Helmholtz-Zentrum Dresden Rossendorf, Dresden, Germany
- P.2994 Self-assembled Colloidal Particles with pH Sensing Property
Weijun Tong, Department of Polymer Science and Engineering, Zhejiang University, Hangzhou, P.R. China
- P.2996 Zn release behavior of amorphous calcium phosphate and alginate gel composite
Tomohiro Uchino, College of Engineering, Nihon University, Koriyama, Japan
- P.2998 X-ray microtomography of wall prosthesis, a new way to look at interaction of human tissues and prosthesis
Gabrielle Voisard, General Surgery Departement, Université Laval, Québec, QC, Canada
- P.3000 Epigallocatechin gallate (EGCG) induced chemical conversion coatings for corrosion protection of biomedical MgZnMn alloys
Jin Wang, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, P.R. China
- P.3002 Improving the chemotactic and homing availability of Endothelial progenitor cells (EPC) by loaded VEGF Hep-PLL nanoparticles and the ex vivo investigation
Lai Wei, Southwest Jiaotong University, Chengdu, China, Chengdu, P.R. China
- P.3004 Micro X-ray fluorescence mapping of mineralised soft tissues and calcium phosphates: Understanding pathological mineralisation and calcium phosphate chemistry
Richard L Williams, School of Chemical Engineering, University of Birmingham, Birmingham, United Kingdom
- P.3006 Controllable preparation of janus superparamagnetic nanoparticles
Yao Wu, Sichuan University, Chengdu, P.R. China
- P.3008 Novel Method for Synthesis of Multiphase Bioactive Glass Ceramic Powder in the CaO-MgO-SiO₂ System
Chieko Yamagata, Center of Materials Science and Technology (CCTM), Nuclear and Energy Research Institute, Sao Paulo, Brazil
- P.3010 Development of colorimetric sensors for toxic gas detecting
Sengkyun Yoon, Sungkyunkwan University, Suwon, Korea
- P.3012 The preparation of novel PEI cleaning metal surface for inhibiting the proliferation and migration of Eca109 tumor cells in vitro
Kun Zhang, Zhengzhou University, Zhengzhou, P.R. China
- P.3014 Three-dimensional elastin gels as in vitro models for understanding vascular calcification
Peng Zhang, Mining and Materials Engineering, McGill University, Montreal, QC, Canada

15:00 - 16:30

220bcd (P6)

Poster Session 2B**Clinical performance of biomaterials**

- P.3022 Silver particle integrated covering self-expandable metal stent reduces biofilm formation and stent-induced inflammation
Bong Seok Jang, Interventional Therapy Research Team, M.I.Tech Co.,Ltd, Pyeongtaek, Korea
- P.3024 Long-term tissue-integrating oxygen sensors: 3 months in pigs
M. Kate Balaconis, Profusa, College Station, TX, United States
- P.3026 Advanced Iontophoretic Delivery System of Male Contraceptive RISUG® (Reversible Inhibition of Sperm Under Guidance)
Tanmoy Kumar Saha, School Of Medical Science And Technology, Indian Institute of Technology, Kharagpur, India