



www.bio-based-conference.com

12th

International Conference on Bio-based Materials

15–16 May 2019, Maternushaus, Cologne, Germany

Focus: Bio-based Building Blocks & Polymers + Biodegradable Solutions + Bio-based Fine Chemicals + Innovation Award



Organiser



www.nova-institute.eu

Premium Partner



www.clib2021.de

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HIGHLIGHTS OF THE WORLDWIDE BIOECONOMY

One of the leading and established international conferences on bio-based chemicals and materials

- Vision & Policy
- Bio-based Building Blocks
- Bio-based Polymers
- Biodegradable Solutions
- Biorefineries
- **NEW** Bio-based Fine Chemicals (Food Ingredients, Flavours, Body Care, Cosmetics, Pharmaceuticals)
- Innovation Award „Bio-based Material of the Year 2019“

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The Biofore
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WORKSHOPS

- Assessing Bio-based Product Value Chains – How Better Regulation and Standardisation Can Promote a Level Playing Field
- Biotechnological Solutions from China
- In-depth Consumer Research and GreenPremium
- Feasibility of a European Lignocellulosic Biorefinery
- The Difficulties of Building a Biorefinery and How to Avoid Them



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conference.com

Pictures: J.Rettenmaier & Söhne, BASF, nova-Institute

www.bio-based-conference.com



International Conference on Bio-based Materials

15–16 May 2019, Maternushaus, Cologne, Germany

Dear expert,

This year's International Conference on Bio-based Materials is something very special! In addition to the two-day a, two expert workshops will take place the day before and the day after. The focus will be on standards, biotechnology and biorefineries. In addition, there will be a parallel session with fine chemicals for the first time on the first day of the conference.

This year we also welcome the close cooperation with CLIB (www.clib2021.de/en). The annual CLIB conference CIC will pause in 2019 and we will integrate the topics with us. Welcome to all CLIB members!

All in all, in 2019 we expect a record participation with more than 200 participants and 30 exhibitors. – Be there, it's worth it!

Yours sincerely, Michael Carus



Michael Carus
CEO nova-Institute

Evolution of the Bioeconomy: Survival of the Fittest? Learning from Success.

Despite the harsh environment, a few innovative companies find markets for their new bio-based building blocks, chemicals and polymers. We will introduce you to the technology leaders our planet needs for a sustainable future.

Today, **PLA** is produced by two leading companies, **bio-based PBS** has become commercially available and soon the first **bio-based PP** will enter the market while **bio-based PE** production capacities are expanded at the same time. Bio-based polymers can be found in almost all application sectors, such as **packaging, consumer goods, toys, automotive, textiles or coating**. New **bio-based building blocks** are also available for **body care, cosmetics, food ingredients** and **pharmaceuticals**. On top of that, more and more biogenic side streams from the food industry are utilised via biotechnology as part of the **circular bioeconomy**.

Every year the **Innovation Award “Bio-based Material of the Year”** is given to the most innovative material and product on the market. Many thanks to **Infraserv Knapsack (www.infraserv-knapsack.de/future)** for sponsoring the Innovation Award. In 2019, six companies will be nominated by an expert jury, out of which the winner will be chosen during the conference. Join one of the biggest B2B events of the year and experience the most exciting new developments and strategies in bioeconomy.

Call for papers & posters

You are welcome to present your latest products, technologies or developments. Please hand in your application as soon as possible. <http://bio-based-conference.com/call-for-papers>

Want to present a poster? Please hand in your application here <http://bio-based-conference.com/call-for-posters>



12th International Conference on Bio-based Materials

15–16 May 2019, Maternushaus, Cologne, Germany

The **12th International Conference on Bio-based Materials** is aimed at providing international major players from the bio-based building blocks, polymers and industrial biotechnology industries with an opportunity to present and discuss their latest developments and strategies. The conference builds on successful previous conferences: 200 participants and 30 exhibitors are expected.

Innovation Award “Bio-based Material of the Year 2019”

For the 12th year in a row, the Innovation Award “Bio-based Material of the Year” will be awarded to the young, innovative bio-based chemicals and materials industry for finding suitable applications and markets for bio-based products. The focus of the award is on new developments within these areas, which had been launched in 2018 or will be launched in 2019. Producers and inventors of innovative bio-based materials are invited to hand in their application by end of February 2019.



Many thanks to **Infraserv Knapsack** (www.infraserv-knapsack.de/future) for sponsoring the Innovation Award “Bio-based Material of the Year”.

More information here
www.bio-based-conference.com/award-application

Selected winners of the past Innovation Awards „Bio-based Material of the Year“:

- AIMPLAS
- Arctic Biomaterials
- Bayer MaterialScience
- Bio-Lutions
- Cardolite Corporation
- Covestro
- Ecovative Design
- Evonik
- Fischer
- FKUR
- HIB Trim Part Solutions
- Newlight Technologies
- Omodo
- Orineo
- Paptic
- Phytowelt
- Qmilk
- Staedtler Mars

Your Conference Team



Michael Carus
CEO
michael.carus@nova-institut.de



Dominik Vogt
Conference Manager,
Exhibition
+49 (0)2233 4814-49
dominik.vogt@nova-institut.de



Seena Koyadan
Innovation Award
+49 (0)2233 4814-79
seena.koyadan@nova-institut.de



Jutta Millich
Media & Partnerships
+49 (0)561 503580-44
jutta.millich@nova-institut.de



Asta Partanen
Sponsoring
+49 (0)2233 4814-59
asta.partanen@nova-institut.de



Vanessa Kleinpeter
Contact, Registration
+49 (0)2233 4814-40
vanessa.kleinpeter@nova-institut.de

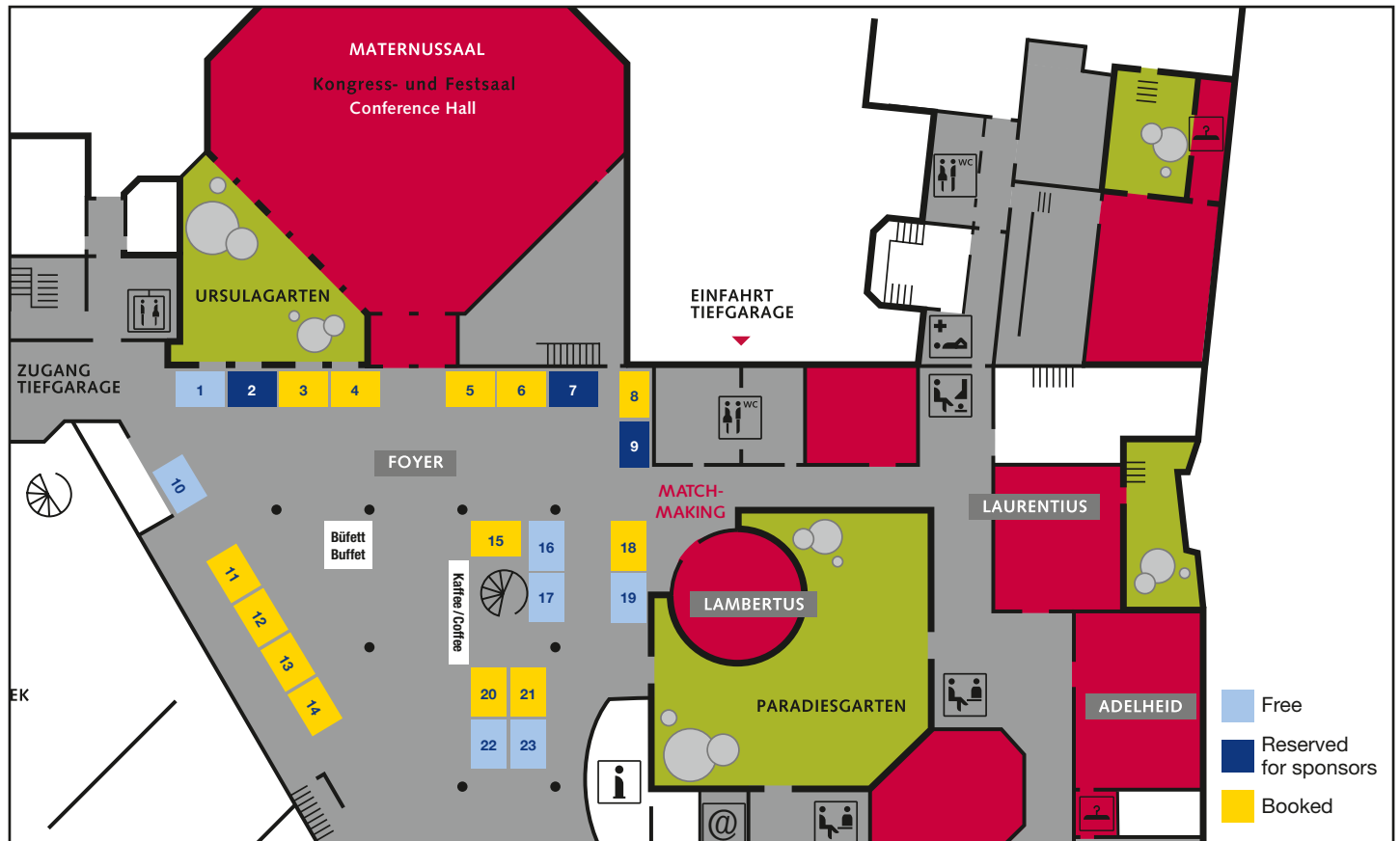
Venue & Accommodation

Maternushaus Cologne
Kardinal-Frings-Str. 1–3
50668 Cologne, Germany
+49 (0)221 16310
info@maternushaus.de

Entrance Fee

Conference incl. Catering
plus 19 % VAT

1 st Day 15 May 2019	2 nd Day 16 May 2019
565 €	515 €
865 €	



Exhibition and sponsoring opportunities

The fee of a booth (6 m²) is 500 EUR (excl. 19% VAT). We provide you a table, table cloths, a pin board, a chair and a power connection. You are welcome to use your own booth system. **After booking your booth** please submit Mr. **Dominik Vogt** a printable logo and a company profile.

All **sponsoring** opportunities are available for download http://bio-based-conference.com/wp-content/uploads/2019/01/19-01-21_BMC_Sponsoring-Letter-1.pdf

Exhibitors

Booth

- | | |
|--|---|
| 3: Fachagentur Nachwachsende Rohstoffe e.V. (FNR) | 13: Forschungszentrum Jülich |
| 4: CLIB (Cluster Industrial Biotechnology) | 14: nova-Institut |
| 5: Fraunhofer UMSICHT | 15: B.R.A.I.N. |
| 6: Neste | 18: Arctic Biomaterials Oy |
| 8: Media Table | 20: Enterprise Europe Network in North Rhine-Westphalia – NRW.Europa |
| 11: FKUR Kunststoff | 21: J. Rettenmaier & Söhne |
| 12: Bio Base Europe Pilot Plant | |





International Conference on Bio-based Materials

15–16 May 2019, Maternushaus, Cologne, Germany

14 May 2019 Workshops day prior	15 May 2019 Conference 1 st day	16 May 2019 Conference 2 nd day	17 May 2019 Workshops day after
10:00 Regulation and Standardisation 14:30 Biotechnological from China	09:30 Vision & Policy 13:00 Bio-based Building Blocks & Polymers 13:00 Bio-based Fine Chemicals 17:00 Innovation Award	09:00 Industrial Biotechnology 11:00 Workshop on consumer perceptions 11:00 Biodegradable Solutions	09:00 Building a Biorefinery 09:00 Lignocellulosic Biorefinery

The day prior to the conference, 14 May 2019

Workshops* in Room Laurentius

 **10:00–14:15** Stakeholder Workshop STAR4BBI: Assessing Bio-based Product Value Chains – How Better Regulation and Standardisation can Promote a Level Playing Field

At the STAR4BBI stakeholder workshop, results gained within the EU funded project will be presented with a focus on the regulatory and standardization barriers of bio-based economy, a forecast analysis of future technologies and barriers expected. Suggestions for overcoming these barriers will be discussed. The project partners welcome input from relevant stakeholders on the proposals for a future supportive regulatory and standardization framework developed within the project. For more information about the event:

<http://nova-institute.eu/star4bbi/workshop>

 **14:15–17:00** CLIB Workshop* on Biotechnological Solutions from China

In this workshop biotechnological solutions for several application fields like cosmetics, personal care, food, feed and agriculture will be presented and discussed. Chinese companies and institutes of the Chinese Academy of Science will give insight into cutting edge developments.

For further information please contact Dennis Herzberg (CLIB, herzberg@clib-cluster.de)

***Participation in the workshop is free of charge; the number of participants is limited and prior registration is obligatory.**

The day after the conference, 17 May 2019

Workshop* in Room Laurentius



09:00–13:00 Stakeholder workshop PULP2VALUE: The Difficulties of Building a Biorefinery and How to Avoid Them

The ultimate goal of the PULP2VALUE project funded by BBI JU is to design a fully integrated biorefinery based on sugar beet pulp. In this workshop the project team will present the experiences of this exciting journey of the last 4 years and discuss with the audience the challenges, risks and pitfalls of building a biorefinery. Participants are invited to contribute their feedback and recommendations in order to organise a constructive and fruitful workshop. For more information about the event:

<http://pulp2value.eu/workshop>

Workshop* in Room Adelheid



09:00–13:00 BIOFOREVER: Feasibility of a European Lignocellulosic Biorefinery

The goal of the BIOFOREVER project is to demonstrate the feasibility of an European biorefinery for the production of lignocellulosic sugars, lignin/lignosulfonates and other (downstream) products including carbon binders, enzymes, ethanol, butanol, FDCA, nano-celluloses and resin acids. Various technologies for the conversion of woody biomass to lignocellulosic sugars are presented and discussed such as API Europe's AVAP technology, Avantium's DAWN Technology, Borregaard's BALI technology and BPF's mild acid/steam explosion technology.

The intention of the workshop is also to create interest amongst workshop participants to explore participation in biorefinery projects as feedstock suppliers, for the off-take of ethanol, cellulosic sugars or other bio-based products and/or as investors.

For more information about the event:

<http://bio-based.eu/bioforever/index.php?lng=en>

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14 May 2019
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10:00–14:30

15 May 2019
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09:30–18:30

16 May 2019
Conference 2nd day

09:00–17:00

17 May 2019
Workshops day after

09:00–13:00

Preliminary programme of the 1st day, 15 May 2019

Maternussaal



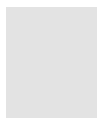
19:30 **Opening:**
Michael Carus
nova-Institut

Vision & Policy



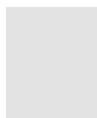
09:40 **David Newman**
Bio-Based and Biodegradable Industries Association (BBIA)

The UK – Despite Brexit a lot of Good News on the Bioeconomy



10:00 **Prajesh Mistry**
Godavari Biorefineries

Biorefining – From Feedstock to Markets



10:20 **Edgard Seikaly**
UNICEF

Shared Sustainability Values – Introduction of Bio-Compostable Plastic Bags in Africa



10:40 **Maria Carcolé**
Neste

How to Widen the Range of Bio-Based Materials While Assuring Sustainability



11:00 **Irene Cristina Latorre Martinez**
Covestro

Sustainability at Covestro Makes the World a Brighter Place: Using Bio-Based Feedstocks to Achieve New Material Properties



11:20 **Michael Carus**
nova-Institut

European Plastic Policy, Renewable Carbon and Biodegradation

11:40 **Questions & Answers**

11:50 **Lunch Break**

Bio-based Building Blocks & Polymers



13:20 **Doris de Guzman**
Tecnon OrbiChem

Bio-Based Building Blocks: 2019 Commercialisation Updates



13:40 **Pia Skoczinski & Raj Chinthapalli**
nova-Institut

Latest Market Data on Bio-Based Polymers



14:00 **Willemijn Witteveen**
Avantium

The Opportunity of Sustainable Materials



14:20 **David Sudolsky**
Anellotech

Commercialising Cost-Competitive, Renewable Aromatics for Bio-Based Chemicals and Fuels



14:40 **Milica Folic**
Haldor Topsøe

Bio-Based MEG: First Learnings and Results from the MOSAIK™ Demonstration Plant

15:00 **Questions & Answers**

15:10 **Coffee Break**



15:30 **Stephan Roest**
Corbion

Corbion's Biocatalytic Pathway to FDCA for PEF Bioplastic



15:50 **Stefan Krawielitzki,**
AVA Biochem

5-HMF, the Key to Bio-based Furan Chemistry



16:10 **David Thomas**
VTT

Unique Sugar Acid Pathway to FDCA



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09:00–13:00

Preliminary programme of the 1st day, 15 May 2019

16:30 **Pieter Imhof**
BioBTX

Full Circularity Enabled: Sustainable, Cost Competitive Production of Platform Chemicals

16:50 **Zdenek Moravec**
Spolchemie

EnviPOXY(R) – Sustainable Solution for Epoxy Applications

17:10 **Questions & Answers**

NEW: Bio-based Fine Chemicals
(Food Ingredients, Flavours, Body Care Cosmetics, Pharmaceuticals)

13:20 **Roland Breves**
Henkel

New Materials for the Cosmetics Industry – Needs and Requirements

13:40 **Babette Pettersen**
Ginkgo Bioworks

Synthetic Biology for New Bio-Based Fine Chemicals

14:00 **Jacco van Haveren**
Wageningen UR/Food and Biobased Research

Environmentally Benign Synthesis of Cosmetic and Food Ingredients

14:20 **Cara Tracewell**
Zymergen

Applying Molecular Technology to Industrial Strain Optimization for Bio-based Chemical Fermentation

14:40 **Andreas Worberg**
Novo Nordisk Foundation Center for Biosustainability (DTU Biosustain)

Having the End in Mind – Commercialisation of Bio-based Chemicals in a Translational Core

15:00 **Questions & Answers**

15:10 **Coffee Break**



15:30 **Dennis Uebel**
ALTANA

Biotechnology in the Field of Specialty Chemicals



15:50 **Bente Nersten**
Borregaard

Vanillin and a new Advanced Texture System (SenseFi) for Food from a Spruce-Based Biorefinery



16:10 **Marc Struhalla**
c-LEcta

Cell-free Synthetic Biology for the Production of Functional Food Ingredients



16:30 **Sophie van Schoubroeck**
VITO

Sustainability Analysis of an Algae-based Value Chain in North-West Europe



16:50 **Hans van Klink**
Dutch Sustainable Development

Prospects of Sustainable Feedstock Production for Advanced Building Blocks

17:10 **Questions & Answers**

Innovation Award

17:20 **Six presentations**

18:30 **Beer reception**

Submit your application for the Innovation Award now!
<http://bio-based-conference.com/award-application>

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Preliminary programme of the 2nd day, 16 May 2019

Industrial Biotechnology



09:00 **Guido Meurer**
B.R.A.I.N.

Introduction to the German Research Project "ZeroCarbFP"



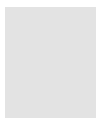
09:10 **Marc Gauert**
B.R.A.I.N.

*Production of Bio-Malic Acid Employing the Smut Fungus *Ustilago Trichophora**



09:25 **Esther Gabor**
B.R.A.I.N.

Bio-Based Recovery of Precious Metals from Secondary Resources



09:40 **Edda Höfer**
Südzucker

CO₂ as Carbon Source for Bio-Based Chemicals



09:55 **Rolf Luther**
Fuchs Schmierstoffe

Biotechnological Production of Lubricant Additives from Renewable Resources

10:10 **Questions & Answers**

10:20 **Coffee Break**



10:50 **Asta Partanen**
nova-Institut

GreenPremium for Bio-Based Products and In-Depth Psychological Market Research for Insights into Consumers' Mindset

11:15 **Parallel Workshop on In-Depth B2C Market Research and GreenPremium****

** Participation of the conference is not free of charge. Please find more here www.bio-based-conference.com

Participation in the workshop is free of charge; the number of participants is limited and prior registration is obligatory.

The venue of all events is the Maternushaus, Cologne: <https://tagen.erzbistum-koeln.de/maternushaus>

Biodegradable Solutions



11:10 **Bruno de Wilde**
OWS

Biodegradation, One Principle, Many Nuances: Overview and Latest Developments



11:30 **Michael Carus**
nova-Institut

For Which Applications do we need Biodegradations as an End-Of-Life Solution?



11:50 **Carmen Michels**
FKuR

Circular Economy: Closing the Loop with Bioplastics



12:10 **Stefano Facco**
Novamont

Positioning of Compostable Polymers within SUP and ECHA, Special Outlook on Southern Europe



12:30 **Meryem Top**
Sunar Misir

TPS and Plastics Industry in Turkey

12:50 **Questions & Answers**

13:00 **Lunch Break**



14:20 **Jan Ravenstijn**
Jan Ravenstijn Consulting

PHA-Platform – the Global Organization for PHA: GO!PHA



14:40 **Phil van Trump**
Danimer

Nodax™ PHA: Technology Updates & the Road to Commercialisation



15:00 **Fabien Resweber**
PTMCC Biochem Company

BioPBS, Renewable Carbon Based Polyester for Efficient Management of Plastic Packaging End-of-life

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Preliminary programme of the 2nd day, 16 May 2019

15:20 Elisabeth Stanger
Lenzing 

Cellulose Fibres: Closing the Loop in Fashion

15:40 Gerhard Maier
Polymaterials 

How to Make the Best of PLA and PBS: Optimising Bio-Based Blends and Compounds with High Throughput Screening and Predictive Models

16:00 Albrecht Läufer
BluCon Biotech  

2nd Generation Lactic Acid – Fermentation of Cellulosic Substrates by Caldicellulosiruptor sp.



16:20 Martien van den Oever
Wageningen Food & Biobased Research 

Luana Ladu
Technischen Universität Berlin 

Improved Standards and Regulations to Support Bio-based Industry (European Project STAR4BBI)



16:40 Questions & Answers

16:50 End of the conference and after conference meeting point in a Cologne brewhouse

The day after the conference, 17 May 2019

Workshop* in Room Laurentius



09:00–13:00 Stakeholder workshop PULP2VALUE: The Difficulties of Building a Biorefinery and How to Avoid Them

Workshop* in Room Adelheid



09:00–13:00 BIOFOREVER: Feasibility of a European Lignocellulosic Biorefinery

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www.bio.org/events/bio-world-congress



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www.scp-centre.org



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www.stoffstroeme.de

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<http://greenchemicalsblog.com>



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<http://plasticker.de>



www.plastixportal.co.za



www.heise.de/tr

Save the Date: nova-Institute Events in 2019



7th Conference on



CO₂

Carbon Dioxide
as Feedstock for
Fuels, Chemistry
and Polymers



20-21 March 2019
Maternushaus, Cologne, Germany
www.co2-chemistry.eu

16th
by nova-Institute

EHHA
HEMP
CONFERENCE



5-6 June 2019
Maternushaus, Cologne, Germany
www.eiha-conference.org



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- 20,000 reports
- 10,000 companies
- 160,000 readers monthly
- > 1,500 Twitter followers:
@Biobased_News



www.bio-based.eu/news



International Directory for Bio-based Businesses (iBIB)

Easy and direct access to producers,
suppliers and experts in the Bio-
based Economy worldwide.

Upload your company profile now
for free, get visible for thousands
of customers!



www.bio-based.eu/iBIB

Contact: Mr. Dominik Vogt, +49 (0) 2233 48 14 49, dominik.vogt@nova-institut.de

All conferences at www.bio-based.eu

Bio-based Polymers & Building Blocks

The best market reports available



Update 2018

Bio-based Building Blocks and Polymers – Global Capacities, Production and Trends 2018–2023

Authors: Raj Chinthapalli, Pia Skoczinski, Michael Carus, Wolfgang Baltus, Doris de Guzman, Harald Kaeb, Achim Raschka, Jan Ravenstijn
February 2019

This and other reports on the bio- and CO₂-based economy are available at www.bio-based.eu/reports

Update 2019

Carbon dioxide (CO₂) as chemical feedstock for polymers – technologies, polymers, developers and producers

Authors: Achim Raschka, Pia Skoczinski, Jan Ravenstijn and Michael Carus, nova-Institut GmbH, Germany
February 2019

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Update 2019

Succinic acid: New bio-based building block with a huge market and environmental potential?

Pharmaceutical/Cosmetic	Industrial
<ul style="list-style-type: none"> Acidic ingredient for denture cleaner/footpaste Asidite Calcium-succinate is anticarcinogenic Etherless tablets Intermediate for acetones Pharmaceutical intermediates (acetates, amphiphilic reagents, antibacterial, diuretic) Preservative for latexes Retriever fish odour Used in the preparation of vitamin A 	<ul style="list-style-type: none"> De-icer Engineering plastics and epoxy casting agents/hardeners Herbicides, fungicides, regulators of plant growth Intermediate for lacques + photographic chemicals Plasticizer (preparates phthalates, adipic acid) Rayon Solvents, lubricants Surface cleaning agent (metal/electronic-/semiconductor industry)
Food	Succinic Acid
<ul style="list-style-type: none"> Bread softening agent Flavour-enhancer Flavouring agent and acidic seasoning in beverages Microencapsulation of flavouring oils Preservative (vitamin, dry food) Protein gelatinisation and in dry gelatine desiccant-like flavourings Used in synthesis of modified starch 	<ul style="list-style-type: none"> Acidic aluminium Chemical metal plating, electroplating baths Coatings, inks, pigments, powder/injection-curable coating, resins for water-based paint Dye intermediate, photoconductor ink, toners Fabric finish, dyeing aid for fibres Part of antibiotic treatment for barley seeds Preservative for soil fixers Soil-stabilizing agent
	Other
	<ul style="list-style-type: none"> Acidic aluminium Chemical metal plating, electroplating baths Coatings, inks, pigments, powder/injection-curable coating, resins for water-based paint Dye intermediate, photoconductor ink, toners Fabric finish, dyeing aid for fibres Part of antibiotic treatment for barley seeds Preservative for soil fixers Soil-stabilizing agent

Authors: Raj Chinthapalli, Pia Skoczinski, Achim Raschka, Michael Carus, nova-Institut GmbH, Germany
Update March 2019

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Commercialisation updates on bio-based building blocks

Author: Doris de Guzman, Tecnon OrbiChem, United Kingdom
July 2017

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Standards and labels for bio-based products

Authors: Lara Dammer, Michael Carus and Dr. Asta Partanen
nova-Institut GmbH, Germany
May 2017

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Bio-based polymers, a revolutionary change

Comprehensive trend report on PHA, PLA, PUR/TPU, PA and polymers based on FDCA and SA: Latest developments, producers, drivers and lessons learnt

Author: Jan Ravenstijn, Jan Ravenstijn Consulting, the Netherlands
April 2017

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Policies impacting bio-based plastics market development and plastic bags legislation in Europe

Bioeconomy: More than Circular Economy

Authors: Dirk Carrez, Clever Consult, Belgium
Jim Philip, OECD, France
Dr. Harald Kaeb, naroccon Innovation Consulting, Germany
Lara Dammer & Michael Carus, nova-Institute, Germany
March 2017

This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Asian markets for bio-based chemical building blocks and polymers

Share of Asian production capacity on global production by polymer in 2016

Author: Wolfgang Baltus, Wobelt Expedition Consultancy, Thailand
This and other reports on the bio-based economy are available at www.bio-based.eu/reports

Market study on the consumption of biodegradable and compostable plastic products in Europe 2015 and 2020

A comprehensive market research report including consumption figures by polymer and application types as well as by geography, plus analyses of key players, relevant policies and legislation and a special feature on biodegradation and composting standards and labels

Bestsellers

Authors: Harald Kaeb (naroccon, lead), Florence Aeschermann, Lara Dammer, Michael Carus (nova-Institute)
April 2016

The full market study (more than 300 slides, 3,500€) is available at bio-based.eu/top-downloads.

www.bio-based.eu/reports

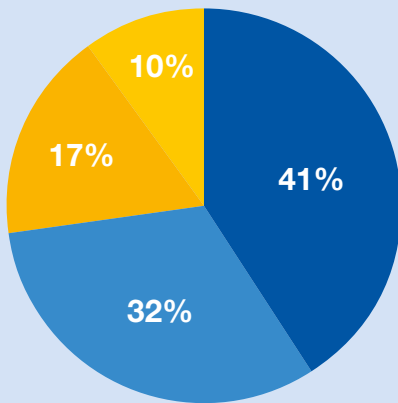




International Conference on Bio-based Materials

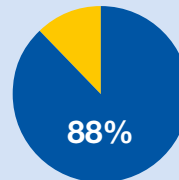
15–16 May 2019, Maternushaus, Cologne, Germany

Attendees of the Conference 2018

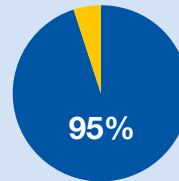


- Larger companies
- SME & Startup
- Academia
- Others

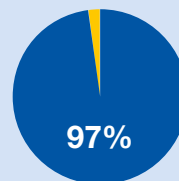
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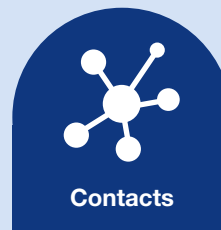


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FINDING ANSWERS TO YOUR QUESTIONS

- Which materials and products do consumers expect in their daily lives in the future?
- For which applications will they prefer bio-based products and when will consumers rather make use of things from recycled materials?
- What do consumers think about the biodegradation of plastics or the use of CO₂ for fuels and mattresses?
- Do consumers make a difference between first and second-generation biomass feedstock for bio-based products?

These and other questions keep industry and policy makers busy. Their answers will have great influence on how the European bioeconomy will be shaped in the next decades. Many quantitative and semi-quantitative studies have been carried out over the last few years, but the picture is still not quite clear.

This gap is being filled now by our novel approach. Instead of conducting the xth standard survey, we provide the combined expertise of two renowned specialists in their fields to supply you with the information you really need.

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“september Strategie & Forschung”, Cologne, is one of Germany’s market leaders in deep psychological market research. Thanks to extensive in-depth interviews with consumers, it is possible to look behind the scenes of buying behaviour and find connections that remain hidden in online surveys.

september works along three guiding principles which are “professional naivety”, “open interviewing” and a “customer-centric approach”. The motto: “Insight into the Matryoshka: How in-depth market research helps you make the right decisions.”

september works for market leaders in the categories of food, fashion, retail, telecommunication and media (www.september-online.de).



“nova-Institute for Innovation and Ecology”, Hürth near Cologne, is one of the market leaders in the field of market and trend reports in the Bio-, CO₂- and Circular Economy, especially in B2B issues. Above all, nova’s market analyses on biopolymers, building blocks and CO₂ use as well as GreenPremium research are known worldwide (www.bio-based.eu).

nova-Institute has worked for companies such as: BASF, BMW, Covestro, DuPont, Evonik, Ford, Honeywell, IKEA, Lego, Mercedes, Mondi, NESTE, Porsche, REWE, Teijin, Total, Velux, Volkswagen, WWF.

“Here at nova-Institute, we are convinced that by enriching our existing comprehensive market knowledge with in-depth psychological market research methods by september, we and the bio-based economy can gain completely new insights.”

Michael Carus
Managing Director, nova-Institute

THE METHOD

To create a tailor-made study for you, we will organise a workshop together with september to discuss the specific approach based on our comprehensive expertise of the specificities of bio-based products and markets. September will conduct in-depth interviews in the European countries of your choice. The results will be discussed in a final workshop.

Guiding principles of the in-depth interviews

Professional naivety

"Childlike curiosity" as a guideline for conversational leadership

- Interviewer adopts a benevolently neutral attitude: the participant is signalled neither satisfaction nor dissatisfaction with the answers in order to largely reduce (social) desirability.
- Moderator questions the supposed self-evident.
- In particular, clichés, stereotypes, generalisations or simplifications are deliberately broken up and their underlying motives and beliefs questioned.

Open interviewing

Interview remains open to results

- No closed questions.
- Moderator takes up impulses from respondents and flexibly expands the range of topics.
- This implies a certain dynamic of the duration with which a topic is discussed - depending on the respondent, it is necessary to focus more or less on a topic.

Customer centric approach

"Focus on the customer" no empty phrase

- The conversation takes its origin in the test person, i.e. his experiences, actions, knowledge, beliefs, feelings and thoughts.
- "Least contamination" - the test person always experiences only as much new information as is necessary for a meaningful discussion of the topic to be researched.
- Timing/order of stimuli (for example material and product samples) are important: e.g. in insight studies stimuli should be shown as late as possible, in communication tests as early as possible.
- Moderator always demands answers that are as realistic and clear as possible for all questions.
- No "why" questions to avoid rationalization - rather, the question arises as to the purpose: what (hidden) purpose does it serve?

The method and its potentials will be presented in a presentation and a dedicated workshop at the **Bio-Based Materials Conference 2019**.
15-16 May 2019, Maternushaus, Cologne (Germany)

Join us!

www.bio-based-conference.com



THE RESULT

Some highlight results of the first ever application of in-depth market research on bio-based products*

What are plastics made of? Consumers generally have no idea about mineral oil being the feedstock. It is a widespread perception that plastics are “bad” and kill animals in the sea.

When it comes to plastics, the interviewees mainly thought of negative aspects, but almost no one was aware that they are made from crude oil: “Something chemical, industrial, artificial ingredient, when it comes to ingredients I don’t really know”. The respondents were very surprised to learn that plastics are actually made from crude oil and can be made of plants.

Easy thinking: plant features are projected onto the product - chemistry is “toxic magic”

The knowledge of chemistry is very low and the transformation from liquid mineral oil to solid plastic works like a miracle. Chemistry is “toxic magic”. In this way, the properties of the raw materials are transferred directly to the end products in consumers’ minds. Wood is hard, resistant and durable; analogously it should only be used to make hard, resistant and long-living products.

First generation feedstock for single-use applications

For soft and single-use applications, interviewees prefer first generation feedstocks: “Food crops are a high-quality feedstock, but they are perceived less valuable than virgin lignocellulosics since food crops grow faster.” The understandable transfer of raw material properties to the product also works for these feedstocks: “This plastic product could be made of corn, because corn feels like plastic” - so it’s only logical you can make plastic out of it. Only very few respondents were aware of the discussions on food or non-food crops for industry, which seems to be mainly a discussion in the political area.

Nobody understands “bio-based” and all plant-derived products will be biodegradable

Products made from plants are biodegradable to consumers. Meaning: It will biodegrade if one throws it in the compost or in the forest. Thus: “Everything made out of plants is environment friendly”. The term “bio” is linked to “organic”, in contrast to “bio-based”, which was not understood or misunderstood. Consumers understand “plant-based”.

Consumers want to be educated by the politics

Consumers feel overwhelmed, not competent and not responsible for the decision which materials are good or bad. Respondents wanted a simple, official and trustworthy label to help them identify the good materials. This result calls into question the numerous consumer awareness projects currently underway. Perhaps the development of a labelling system would be more helpful.

* The results were obtained in the framework of the European research project “Bioforever” which has received funding from the Bio-Based Industries Joint Undertaking under the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 720710. www.bioforever.org

Interested?

Directly contact nova’s Managing Director Michael Carus for a first talk about your needs and interests.



Managing Director
Michael Carus
+49 (0)2233 - 48 14 40
michael.carus@nova-institut.de




nova-Institut
für politische und ökologische Innovation GmbH
Chemiepark Knapsack
Industriestr. 300
50354 Hürth, Germany



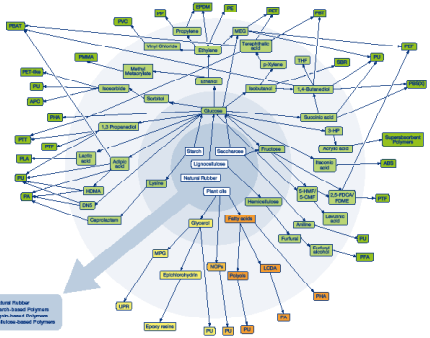
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Data for 2018



Bio-based Building Blocks and Polymers – Global Capacities, Production and Trends 2018–2023



Authors:
Raj Chinthapalli, Pia Skorzinski, Michael Carus, Wolfgang Baltus,
Doris de Guzman, Harald Káb, Achim Raschka, Jan Ravenstijn
February 2019

This and other reports on the bio- and CO₂-based economy are available at www.bio-based.eu/reports



New version with special highlights:
“Bio-based Building Blocks and Polymers – Global Capacities, Production and Trends 2018–2023”

More information starting from February 2019 at www.bio-based.eu/reports

New version with special highlights: “Bio-based Building Blocks and Polymers – Global Capacities, Production and Trends 2018–2023”

Available from February 2019

This annually updated market report gives deep insights into commercially produced bio-based building blocks and polymers. Besides a comprehensive explanation of the building block and polymer properties the report includes detailed information about producers, their manufacturing locations and their installed capacities.

For the year 2018 this market report offers very special highlights:

- Comprehensive information on capacity development from 2018 to 2023, per bio-based building block and polymer
- **For the first time production data for the year 2018, per bio-based polymer**
- Detailed functional and production-related information on a total of 17 bio-based building blocks and 16 polymers
- Analyses of market developments and producers per building block and polymer
- **Detailed research, calculation and explanation of the market development of cellulose acetate (CA), bio-based epoxy resins and bio-based polyurethanes**
- **Comprehensively updated 171 detailed company profiles** – from start-ups to multinational corporations.

With this market report the readers can quickly gain an overview of developments in the bio-based building blocks and polymers market that go far beyond capacity and production figures.

In 2018 the total production volume reached 7.5 million tonnes – these are already 2% of the production volume of petrochemical polymers. The potential is much higher, but is currently hampered by low oil prices and a lack of political support.

The market and trend report is written by the international biopolymer expert group headed by the nova Institute. The authors come from Asia, North America and Europe. The report is now available for 3,000 € at www.bio-based.eu/reports – in addition to further market studies on special areas of bio- and CO₂-based economics.