

International Conference and Exhibition on

# **Biopolymers and Bioplastics**

August 10-12, 2015 San Francisco, USA



## **OMICS International Conferences**

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# Scientific Program

Day 1 August 10, 2015

07:30-08:30 Registrations

Sierra B



08:30-08:55

## Opening Ceremony

### Keynote Forum

08:55-09:00	<b>Introduction</b>
09:00-09:25	<b>Florent Allais</b> AgroParis Tech, France
09:25-09:50	<b>Amar K Mohanty</b> University of Guelph, Canada

### Track 9 : Polyhydroxyalkanoates

Session Chair: **Nazim Cicek**, University of Manitoba, Canada

Session Co-chair: **Steven Pratt**, The University of Queensland, Australia

#### Session Introduction

09.50-10.10	<b>Microbial conversion of biodiesel waste products into medium chain length polyhydroxyalkanoates (mcl-PHA) using <i>pseudomonas putida</i> LS46</b> <b>Nazim Cicek</b> , University of Manitoba, Canada
10.10-10.30	<b>Biocomposites from waste-derived polyhydroxyalkanoate (PHA): mixed culture generation of polyhydroxybutyrate-co-valerate (PHBV) copolymers and their inclusion in wood plastic composites</b> <b>Steven Pratt</b> , The University of Queensland, Australia
10.30-10.50	<b>Acidogenic valorisation of food industry wastes for polyhydroxyalkanoate (PHA) biosynthesis</b> <b>Maria Reis</b> , Universidade Nova de Lisboa, Portugal
10.50-11.05	<b>PHA copolymers from methane</b> <b>Jaewook Myung</b> , Stanford University, USA

#### Group Photo

Coffee Break: 11.05-11.20 @ Sierra A

### Track 2: Future and Scope for Biopolymers and Bioplastics

### Track 8: Production and Commercialization of Biopolymers and Bioplastics

Session Chair: **Bingkun K Chen**, Mayo Clinic, USA

Session Co-chair: **Bo Shi**, Kimberly-Clark Corporation, USA

#### Session Introduction

11.20-11.40	<b>Bio-based polyethylene blends including non-wood biomass materials</b> <b>Bo Shi</b> , Kimberly-Clark Corporation, USA
11.40-12.00	<b>Extrusion processing of zein to provide higher value with improved processability</b> <b>Gordon Selling</b> , United States Department of Agriculture, USA
12.00-12.20	<b>Emerging electrospun lignin fibers: Carbonization and characterization</b> <b>Manjusri Misra</b> , University of Guelph, Canada
12.20-12.40	<b>Symbiosis of chemistry and biology: BASF's biodegradable and renewable polymers</b> <b>Andreas Künkel</b> , BASF SE, Germany
12.40-13.00	<b>Continuous casting: A soft processing approach to fabricate polysaccharides-based bioplastics</b> <b>Francys K V Moreira</b> , Embrapa Instrumentation, Brazil
13.00-13.15	<b>Low temperature lipase-catalysed synthesis of renewable functional telechelic polyesters in supercritical CO<sub>2</sub></b> <b>Silvio Curia</b> , University of Nottingham, UK

Lunch Break: 13.15-14.00 @ Sequoia-Redwood

14.00-14.15 **Sustainable synthesis & purification of linear & branched poly(lactic acid)**

Amy Goddard, University of Nottingham, UK

14.15-14.30 **New terpene-based polymers**

Marina Fuentes, University of Nottingham, UK

14.30-14.45 **Bioadvantaged thermoplastic elastomers at Iowa State University**

Eric W. Cochran, Iowa State University, USA

14:45-15:45 Workshop on **Polyhydroxyalkanoate (PHA) bioplastics : synthesis and material properties** by  
Steven Pratt, The University of Queensland, Australia

15:45-16:45 Workshop Session: **Biobased Plastics – Materials and Applications** by  
Richard A Gross, Rensselaer Polytechnic Institute, USA

Coffee Break: 16:45-17:00 @ Sierra A

**Day 2 August 11, 2015**

**Sierra B**

## Keynote Forum

08:55-09:00

**Introduction**

09:00-09.25

**Richard A Gross**

Rensselaer Polytechnic Institute, USA

**Track 4: Plastic Pollution and Waste Management**

**Track 5: Biocomposites**

**Session Chair: Ignacy Jakubowicz**, SP Technical Research Institute of Sweden, Sweden

**Session Co-chair: Paulo Sobral**, Duque de Caxias Norte, Brazil

**Session Introduction**

09.25-09.45 **How to make “green” plastics “greener”**

Ignacy Jakubowicz, SP Technical Research Institute of Sweden, Sweden

09.45-10.05 **Preparing for future recycling of “green” alternatives- recycling of polyamides**

Jonas Enebro, SP Technical Research Institute of Sweden, Sweden

10.05-10.25 **Recycling of blends composed of petro- and bio-based plastics**

Nazdaneh Yarahmadi, SP Technical Research Institute of Sweden, Sweden

10.25-10.45 **Process simulation of plastics pyrolysis for the production of fuels and chemical feedstock**

Nasir M A Al Lagtah, Newcastle University International Singapore, Singapore

10.45-11.05 **By-products as a raw material sources – Polish wheat bran packaging Biotrem**

Jaonna Kuzincow, COBRO-Packaging Research Institute, Poland

Coffee Break: 11.05-11.20 @ Sierra A

11.20-11.40 **Upgrading vegetable oil thermosets through copolymer reinforcement with tannin-lipid conjugates**

Warren Grigsby, Scion, New Zealand

11.40-12.00 **Cost effective production and applications of levan from *Acetobacter xylinum* NCIM 2526 using synthetic and complex medium**

Kiran Babu Uppuluri, SASTRA University, India

12.00-12.20 **Certification systems in the environmental field**

Oliver Ehlert, DIN CERTCO GmbH, Germany

12.20-12.40 **Utilization of microalgal-derived ash as a mineral reinforcement material in biocomposite formulation with polyvinyl alcohol**

Dang-Thuan Tran, KAIST, Korea

12.40-13.00 **Nano-engineered natural fiber in biocomposites and bisorption**

Aman Ullah, University of Alberta, Canada

Lunch Break: 13.00-13.45 @ Sequoia-Redwood

13.45-14.00 **Production of exopolysaccharide from rhizobia with potential bioemulsifying applications**

**Tereza Cristina Luque Castellane**, UNESP - Univ Estadual Paulista, Brazil

14.00-14.10 **Biodegradation of mulching films**

**Sedki BEN ALI**, ESITPA, France

#### Track 6: Biomaterials and Biopolymers

**Session Chair: Monique Lacroix**, Laboratoires de recherche en Sciences, Canada

**Session Co-chair: Shih-Jung Liu**, Chang Gung University, Taiwan

#### Session Introduction

14.10-14.30 **Development of active edible coating and biodegradable packaging for food application**

**Monique Lacroix**, Laboratoires de recherche en Sciences, Canada

14.30-14.50 **Electrospinning of biodegradable drug-eluting nanofibers for medical applications**

**Shih-Jung Liu**, Chang Gung University, Taiwan

14.50-15.10 **Structure of cellulose nanofibers and its composite formation**

**Benjamin Chu**, Stony Brook University, USA

15.10-15.30 **Formulation and characterization of PHB/NFC blends for potential thermoforming applications**

**Pieter Samyn**, University of Freiburg, Germany

15.30-15.50 **Moisture sorption and isosteric heat of sorption properties of PVP-CMC hydrogel based food packaging material**

**Nabanita Saha**, Tomas Bata University, Europe

15.50-16.00 **Application of biobased plastics as food packaging material**

**Nanou Peelman**, Ghent University, Belgium

Coffee Break: 16.00-16.15 @ Sierra A

**Day 3 August 12, 2015**

**Sierra B**

### Keynote Forum

09:00-09:25

**David Grewell**

Center for Bioplastics and Biocomposites, USA

09:25-09:50

**Francys Moreira**

National Nanotechnology Laboratory for Agribusiness (LNNA), Brazil

#### Track 1: Green Chemicals : Biopolymers and Bioplastics

**Session Chair: Jian Yu**, University of Hawaii at Manoa, USA

**Session Co-chair: Warren Grigsby**, Scion, New Zealand

#### Session Introduction

09.50-10.10 **A green plastic formed directly from carbon dioxide and sunlight**

**Jian Yu**, University of Hawaii at Manoa, USA

10.10-10.30 **Modifying plastics with functional additives based on condensed tannin esters**

**Warren Grigsby**, Scion, New Zealand

10.30-10.50 **Calcium-hyaluronic acid hybrid film for the promotion of skin regeneration**

**Woo-Kul Lee**, Dankook University, Korea

10.50-11.10 **Synthesis, properties, and structure of alternating copolymers of 3-hydroxybutyrate and lactate units**

**Hideki Abe**, RIKEN Center for Sustainable Resource Science, Japan

Coffee Break: 11.10-11.25 @ Sierra A

11.25-11.45 **The regulatory landscape for novel polymers**

**Richard E Engler**, Bergeson & Campbell, USA

11.45-11.55 **Group IV complexes of tridentate salicylaldiminato ligands and their catalytic activity in ring-opening**

**polymerizations of  $\epsilon$ -caprolactone, lactides and epoxides**

**Dipa Mandal**, IIT Madras, India

11.55-12.05 **Group IV complexes as initiators for the ring opening polymerization studies: ligand and metal screening**  
Pappuru Sreenath, IIT Madras, India

12.05-12.15 **Novel phenolic derivatives of pectin: Enzymatic synthesis and properties**  
Karaki Nadine, Université de Lorraine, France

**Track 3: Biorefineries and Industrial Biotechnology, Different Uses of Bioplastics**

**Track 7: Biofibers and Microbial cellulose**

**Session Chair: Peter Keeling, CBiRC, USA**

**Session Co-chair: Monique Lacroix, Laboratoires de recherche en Sciences, Canada**

**Session Introduction**

12.15-12.35 **Innovations and developments towards advanced biomanufacturing of biobased chemicals**  
Peter Keeling, CBiRC, USA

12.35-12.55 **New development of application of nanocellulose for food packaging application**  
Monique Lacroix, Laboratoires de recherche en Sciences, Canada

12.55-13.15 **Biom mineralized (CaCO<sub>3</sub>) bacterial cellulose: A novel functional biomaterial**  
Nabanita Saha, Tomas Bata University in Zlin, Czech Republic

**Lunch Break: 13.15-14.00 @ Sequoia-Redwood**

14.00-14.20 **Compatibilization of microfibrillated cellulose for bio-based nano-composites through functionalized interface engineering**  
Pieter Samyn, University of Freiburg, Germany

14.20-14.40 **Physical-mechanical properties of hydroxypropyl methylcellulose films as affected by molecular weight and methoxyl content**  
Caio G. Otoni, Federal University of São Carlos, Brazil

14.40-15.00 **Sugarcane based polyethylene - The transition from fossil to plants**  
Joe Jankowski, Braskem America, USA

15.00-15.10 **Characterisation of nanocelluloses from banana pseudo-stem as biomaterial in biodegradable food packaging**  
R H Fitri Faradilla, UNSW, Australia

15.10-15.30 **Cellulose nanocrystals: Potential nanofiller for food packaging and catalytic applications**  
Vimal Katiyar, Indian Institute of Technology Guwahati, India

15.30-15.50 **Microalgal engineering aspects of biopolymer production**  
Jorge Alberto Vieira Costa, Federal University of Rio Grande, Brazil

15.50-16.50 **Workshop on Development of Polymeric Materials from renewable sources using Nanotechnology by Francys Moreira & Caio Otoni, National Nanotech Laboratory for Research in Agriculture Embrapa, Brazil**

**Coffee Break: 16.50-17.15 @ Sierra A**

**Award Ceremony**