

10th Workshop on Fats and Oils as Renewable Feedstock for the Chemical Industry

Karlsruhe, Germany, March 17 – 19, 2019

Sunday, March 17, 2019

Registration

Registration will be open from 15:00 - 19:00

- 15.45 **Welcome and Opening**
- Jürgen O. Metzger, *abiosus* e.V.
- Michael A. R. Meier, KIT
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- 16.00 – 17.30 *First Session*
- Chair: Michael A. R. Meier*
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- 16.00 – 16.30 **At Long Last: Olefin Metathesis Production of Macrocyclic Musk from a Biomass at High Concentration (M)**
- L1 Karol Grela, Biological and Chemical Research Centre, Faculty of Chemistry University of Warsaw and Institute of Organic Chemistry, Polish Academy of Sciences, Warsaw, Poland
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- 16.30 – 17.00 **Future of Surfactants: Sustainability fuels Innovation (M)**
- L2 Martin Vollmer, Clariant, Pratteln, Switzerland
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- 17.00 – 17.30 **Bio-Derived Molecular Materials: Ability to Adapt, Clean and for Energy Storage (M)**
- L3 George John, The City College of New York, Center for Discovery and Innovation, New York, USA
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- 17.30 – 20.30 **Poster Session and Opening Mixer**
- Posters will be displayed until the end of the workshop

(M) Main Lecture 30 min. including discussion

(D) Discussion Lecture 20 min. including discussion

Monday, March 18, 2019

9.00 – 10.30 *First morning session*

Chair:

9.00 – 9.30 **Alteration of Lipase Selectivity for Fatty Acid Enrichment by Protein Engineering (M)**

L4 Katja Zorn¹, Isabel-Oroz-Guinea¹, Henrike Brundiek², Uwe T. Bornscheuer¹, ¹ Institute of Biochemistry, Greifswald University, Greifswald, Germany, ² Enzymicals AG, Greifswald, Germany

9.30 – 9.50 **Synthesis of 100% renewable glycolipids from lignocellulose (D)**

L5 Katrin Ochsenreither, S. Siebenhaller, C. Syldatk, Karlsruhe Institute of Technology (KIT), Institute of Process Engineering in Life Sciences, Section II: Technical Biology, Karlsruhe, Germany

9.50 – 10.10 **Cyanide-free Chemoenzymatic Approach towards Fatty Nitriles and Aliphatic Dinitriles Based on Renewable Feedstocks (D)**

L6 Harald Gröger, Chair of Organic Chemistry I, Faculty of Chemistry, Bielefeld University

10.10 – 10.30 **Enzymatic synthesis of peracids with lipase/acyltransferase for tailored *in situ* epoxidation in mild conditions (D)**

L7 Rebecca Re,¹ Johanna Proessdorf,¹ James J. La Clair¹, Michael D. Burkart¹, Maeva Subileau,^{1,2} ¹ Department of Chemistry and Biochemistry, UC San Diego, La Jolla, United States, ² Montpellier SupAgro, UMR 1208 IATE, 2 Place Viala, 34060 Montpellier Cedex 2, France

10.30 – 11.00 **Coffee break**

11.00 – 12.30 *Second morning session*

Chair:

11.00 – 11.30 **Oleaginous Yeasts as Microbial Cell Factories for the Renewable Production of Lipids and Lipid Derived Products (M)**

L8 Stefan Bruder, Silke Hackenschmidt, Eva Moldenhauer, Felix Bracharz, Johannes Kabisch, Computer-aided Synthetic Biology, TU Darmstadt, Darmstadt, Germany

- 11.30 – 11.50
L9 **Biobased materials and foams from algae or jojoba oils (D)**
Claire Negrell^a, Adrien Cornille^a, Sylvain Caillol^a, Chakib Mokhtari^b, Fouad Malek^b, ^a Institut Charles Gerhardt UMR 5253 – CNRS, UM, ENSCM, Montpellier, France. ^b Laboratoire de Chimie Organique, Macromoléculaire et Produits Naturels – Université Mohamed 1^{er} – Faculté des Sciences, Oujda, Maroc
- 11.50 – 12.10
L10 **Sustainable synthesis of bio-based surfactants from cashew nutshell liquid (CNSL) (D)**
Valentina Bragoni, J. Pollini, R. K. Rit, R. Kirchmann, A. S. Trita, Lukas J. Gooßen, Ruhr Universität Bochum, Bochum (Germany)
- 12.10 – 12.30
L11 **Innovative Concepts for Homogeneous Catalyst Recycling: Novel Solutions in the Functionalization of Unsaturated Oleo Chemicals (D)**
T. Seidensticker, J. Vondran, N. Herrmann, D. Vogt, TU Dortmund University, Laboratory of Industrial Chemistry, Dortmund/Germany
- 12.30 – 14.00 **Lunch break**
- 14.00 – 15.30 *First afternoon session*
Chair:
- 14.00 – 14.30
L12 **From Pheromones to Functional Polymers: Ring-Opening Polymerization of Macrolactones from Long-Chain Hydroxyacids (M)**
Andreas Heise, Department of Chemistry, Royal College of Surgeons in Ireland (RCSI), Dublin , Ireland
- 14.30 – 14.50
L13 **Sustainable epoxidation of Cynara cardunculus seed oil with hydrogen peroxide (D)**
Rosa Turco, Riccardo Tesser, Rosa Vitiello, Vincenzo Russo, Martino Di Serio, Università di Naples Federico II, Department of Chemical Sciences, Napoli, Italy
- 14.50 – 15.10
L14 **Organocatalytic cleavage of fatty acid derivatives to aldehydes and esters (D)**
Nam Duc Vu, Souleymane Bah, Elsa Deruer, Boris Guicheret, Estelle Métay, Nicolas Duguet, Marc Lemaire, University Lyon 1, Villeurbanne, France
- 15.10 – 15.30
L15 **Selective Oxidations of Unsaturated Fatty Acids and Bio-sourced Feedstocks (D)**
Mukund P. Sibi, Department of Chemistry and Biochemistry, North Dakota State University, Fargo, ND, USA
- 15.30 – 16.00 **Coffee break**

16.00 – 17.30 *Second afternoon session*

Chair:

16.00 – 16.30 **Bioeconomy in figures - with a focus on the use of oils and fats in the chemical industry (M)**

L16 Michael Carus, Nova-Institut, Germany

16.30 – 17.00 **Enhancing the physical-mechanical properties of vegetable oil-based waxes using simple, safe and sustainable chemical modifications (M)**

L17 Eliane Goossens¹, Peter Tollington², ¹ Cargill R&D Centre Europe, Vilvoorde, Belgium, ² Cargill Bio-Industrials Europe, Schiphol, The Netherlands

17.00 – 17.20 **Current Development in biobased polyester : PRIC range (D)**

L18 Marie Reulier, ITERG, Canejan, France

17.20 – 17.40 ***N,N*-Dimethylglucamine – A Sustainable Solution for Paints & Coatings (D)**

L19 Adriana Grossmann, Clariant Produkte (Deutschland) GmbH, Burgkirchen, Germany

19.30 *Conference Dinner*

Achat Plaza Karlsruhe

Tuesday, March 19, 2019

9.00 – 10.30

First morning session

Chair:

9.00 – 9.30

Chemical Synthesis of High-Melting Bacterial Polyesters and Chemically Recyclable Polymers (M)

L20

Eugene Y.-X. Chen, Department of Chemistry, Colorado State University, Fort Collins, United States

9.30 – 9.50

Plant oil-based Poly(Alkyl Methacrylate) as Viscosity Control Additive for Mineral and Vegetable Oils (D)

L21

Juliette Lomege, Vincent Lapinte, Claire Negrell, Jean-Jacques Robin, Sylvain Caillol, Institut Charles Gerhardt, CNRS UMR-5253, Ingénierie et Architectures Macromoléculaires, Montpellier, France

9.50 – 10.10

Development of New Bio-based Innovative and Responsive Materials Based on Fatty Acid Derivatives (D)

L22

Khantutta-Kim Tremblay-Parrado, Luc Avérous, BioTeam/ICPEES-ECPM, Université de Strasbourg, Strasbourg, France

10.10 – 10.30

Roots towards innovation in sustainable poly(2,5-furandicarboxylate)s polymeric materials (M)

L23

Andreia F. Sousa, CICECO - Aveiro Institute of Materials, Departamento de Química, Universidade de Aveiro, Aveiro, Portugal

10.30 – 11.00

Coffee Break

11.00 – 12.30

Second morning session

Chair:

11.00 – 11.30

Sustainable Terpene-Based Biopolymers and Novel Functional Biomaterials (M)

L24

Malte Winnacker, Jacob Sag, Andreas Beringer, Bernhard Rieger, WACKER-Lehrstuhl für Makromolekulare Chemie and Catalysis Research Center, TU München, Garching bei München, Germany

11.30 – 11.50

Renewable polyamides via thiol-ene click' chemistry and long-chain aliphatic segments (D)

L25

Phan Huy Nguyen, Steven Spoljaric, Jukka Seppälä, Polymer Technology, Department of Chemical and Metallurgical Engineering, Aalto University School of Chemical Engineering, Aalto, Finland

- 11.50 – 12.10 **Sustainable Cellulose modification *via* transesterification using high oleic sunflower in a DBU-CO₂ switchable solvent system (D)**
- L26 Kelechukwu (Kenny) N. Onwukamike,^{1,2} S. Grelier,² E. Grau,² H. Cramail,² M.A.R. Meier¹, ¹ Institute of Organic Chemistry (IOC), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany. ² Laboratoire de Chimie des Polymères Organiques, Université de Bordeaux, UMR5629, CNRS - Bordeaux INP - ENSCBP, Pessac Cedex France.
- 12.10 – 12.30 **Non-isocyanate bio-based polyurethanes through reactive extrusion (D)**
- L27 Fiona Magliozzi,^{1,2} Etienne Grau^{1,2}, Guillaume Chollet³, Henri Cramail^{1,2}, ¹Univ. Bordeaux, LCPO, UMR 5629, Pessac, France ² Bordeaux INP, LCPO, UMR 5629, Talence, France, ³ITERG, F-Canéjan, France
- 12.30 – 14.00 **Lunch break**
- 14.00 – 15.30 *Afternoon session*
- Chair:*
- 14.00 – 14.30 **Epoxidized Sucrose Esters as a Platform Technology for High Performance Thermosets (M)**
- L28 Dean C. Webster, North Dakota State University, Fargo, North Dakota, USA
- 14.30 – 15.00 **Recent Advances in Hydroformylation, Hydrohydroxy-methylation and Hydroaminomethylation of Oleochemicals (M)**
- L29 Eric Monflier, University of Artois, Unité de Catalyse et Chimie du Solide, UMR CNRS 8181, Faculté des Sciences Jean Perrin, Lens, France
- 15.00 – 15.30 **Renewable building blocks for potential use in coatings (M)**
- L30 Eva E. Malmström, KTH Royal Institute of Technology, Stockholm, Sweden
- 15.30 **Poster Award and Closing Remarks**
- Best Poster Award**
Award committee
- 15.45 **End of Workshop**