

6th Workshop on Fats and Oils as Renewable Feedstock for the Chemical Industry

Karlsruhe, Germany, March 17 – 19, 2013

<http://www.abiosus.org/kit-workshop-2013.html>

Sunday, March 17, 2013

Registration

Registration will be opened from 13:00 - 19:00

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| 15.30 | Welcome and Opening |
| 16.00 – 18.00 | <i>First Session</i> |
| 16.00 – 16.30
L1 | Polyurethanes from renewable resources and carbon dioxide (M)
<u>Rolf Mülhaupt</u> , Freiburg Materials Research Center and Institute for Macromolecular Chemistry, Freiburg, Germany |
| 16.30 – 17.00
L2 | Novel high molecular weight vinyl ether polymers based on plant oils (M)
Samim Alam, Harjyoti Kalita, Satyabrata Samanta, Andrey Chernykh, <u>Bret J. Chisholm</u> , North Dakota State University, Fargo (ND), USA |
| 17.00 – 17.30
L3 | Protein engineering and application of enzymes in lipid modification (M)
<u>Uwe Bornscheuer</u> , Institute of Biochemistry, Greifswald University, Germany |
| 17.30 – 18.00
L4 | Epicerol[®] and the environmental challenges of bio-based chemistry (M)
<u>Thibaud Caulier</u> , Solvay, Brussels, Belgium |
| 18.00 – 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, 2013

9.00 – 10.30 *First morning session*

9.00 – 9.30 **Metathesis: Commercialization of specialty chemicals from lipids (M)**

L5 Mel Luetkens, Elevance Renewable Science, Woodridge, IL, USA

9.30 – 9.50 **News from the isomerizing alkoxy-carbonylation (D)**

L6 Philipp Roesle¹, Timo Witt¹, Florian Stempfle¹, Josefine T. Christl¹, Ilona Heckler¹, Gerhard Müller¹, Lucia Caporaso², Stefan Mecking¹,
¹Department of Chemistry, University of Konstanz, Konstanz, Germany; ² Department of Chemistry, University of Salerno, Fisciano (SA), Italy

9.50 – 10.10 **Polyesters and polyamides precursors from natural and waste oils (D)**

L7 Marc R. L. Furst¹, David J. Cole-Hamilton¹, Thomas Seidensticker¹, Ronan Le Goff¹, Catherine H. Botting¹, Dorothee Quinzler², Stefan Mecking²
¹St. Andrews, Scotland, UK ; ² Department of Chemistry, University of Konstanz, Konstanz, Germany

10.10 – 10.30 **Access to value-added products via metathesis of fats and terpene derivatives (D)**

L8 Christian Bruneau, Cédric Fischmeister, Antoine Dupé, Hallouma Bilel, Université de Rennes 1, Sciences Chimiques, Rennes, France

10.30 – 11.00 **Coffee break**

11.00 – 12.50 *Second morning session*

11.00 – 11.30 **Fatty alcohols from triglycerides via catalytic hydrogenation (M)**

L9 Dmitry G. Gusev, Denis Spasyuk, Wilfrid Laurier University, Waterloo, Ontario, Canada

11.30 – 11.50 **Fe-catalyzed oxidative cleavage of olefins towards aldehydes with hydrogen peroxide (M)**

L10 Peter Spanning, Pieter C. Bruijninx, Bert M. Weckhuysen, Bert Klein Gebbink, Utrecht University, Utrecht, Netherlands

- 11.50 – 12.10 **The first catalytic Lossen rearrangement: Sustainable access to fatty acid derived nitrogen containing monomers and polymers (D)**
L11 Oliver Kreye, Sarah Wald, Maike Unverferth, Alexander Prohammer, Michael A. R. Meier, KIT, Karlsruhe, Germany
- 12.10 – 12.30 **Regioselective hydrogenation of vegetable oils with Pt/ZSM-5 catalysts (D)**
L12 An Philippaerts, Pierre Jacobs, Bert Sels, K.U.Leuven, Heverlee, Belgium
- 12.30 – 12.50 **Catalyst selection for conversion of fats and oils to renewable chemical products (D)**
L13 Aalbert Zwijnenburg, Johnson Matthey Chemicals GmbH, Emmerich, Germany
- 12.50 – 14.00 **Lunch break**
- 14.00 – 15.30 *First afternoon session*
- 14.00 – 14.30 **ADM's Green Chemistry - platform chemicals based on renewable feedstock (M)**
L14 Jürgen Fischer, ADM Research GmbH, Hamburg, Germany
- 14.30 – 14.50 **Isosorbide-based value products (D)**
L15 Claudia Stoer, Markus Dierker, Claus Nieendick, Catherine Breffa, BASF Personal Care and Nutrition GmbH, Düsseldorf, Germany
- 14.50 – 15.10 **Polyurethane dispersions based on renewable resource materials – off to pasture new! (D)**
L16 Manfred Diederich, Markus Dimmers, Maria Ebert, Alberdingk Boley GmbH, Krefeld, Germany
- 15.10 – 15.30 **Development of transformer oils based on renewable raw materials (D)**
L17 Günther Kraft, FUCHS Europe Schmierstoffe, Mannheim, Germany
- 15.30 – 16.00 **Coffee break**

16.00 – 17.30 *Second afternoon session*

16.00 – 16.30 **Biorefinery: A sustainable design platform for green surfactants and soft materials (M)**
L18 George John, Department of Chemistry, the City College of the City University of New York, New York, USA

16.30 – 16.50 **Synthesis of fatty ethers: Catalytic reduction of fatty acid esters (D)**
L19 Ursula Biermann, Jürgen O. Metzger, Universität Oldenburg and abiosus e.V., Oldenburg, Germany

16.50 – 17.10 **Additions to unsaturated fatty acid esters: Electrophilic additions via boron compounds and [2+2]-cycloadditions with N-chlorosulfonylethenimine to β -lactams (D)**
L20 Hans J. Schäfer, Theodor Lucas, Christian Kalk, Organisch-chemisches Institut der Universität Münster, Münster, Germany

17.10 – 17.30 **Singlet oxygenation of unsaturated monoglycerides in single-phase and multiphase systems using hydrogen peroxide catalyzed by molybdate anions (D)**
L21 Hermine HNM NSA MOTO, Zephirin MOULOINGUI, Université de Toulouse, ENSIACET-INRA-INP Toulouse, Laboratoire de Chimie Agro-Industrielle, Toulouse, France

19.30 *Conference Dinner*

Renaissance Karlsruhe Hotel

Tuesday, March 19, 2013

- 9.00 – 10.40 *First morning session*
- 9.00 – 9.30 **Synthesis of new biobased building blocks for PU synthesis: towards platform chemicals (M)**
L22 Sylvain Caillol, Remi Auvergne, Bernard Boutevin, ICGM - ENSCM, Montpellier, France
- 9.30 – 10.00 **Biobased Polyamides past, present and future (M)**
L23 Jürgen Herwig, Jasmin Nitsche, Harald Häger, Evonik, Marl, Germany
- 10.00 – 10.20 **Plant oil based renewable Polyamide monomers and their polymers via efficient (catalytic) processes (D)**
L24 Matthias Winkler, Oğuz Türünç, M. A. R. Meier, KIT, Karlsruhe, Germany
- 10.20 – 10.40 **Dimer fatty acids: Building blocks for a multitude of new macromolecular architectures (D)**
L25 Luc Averous, ICPEES-ECPM University of Strasbourg, France
- 10.40 – 11.10 **Coffee Break**
- 11.10 – 12.30 *Second morning session*
- 11.10 – 11.40 **Enzyme-catalyzed reactions for fatty acids modification (M)**
L26 Pierre Villeneuve, UMR IATE, CIRAD, Montpellier, France
- 11.40 – 12.00 **Fine-tuning fatty acids length chain by metabolic engineering for “Single Cell Oils” strategies in *Ashbya gossypii* (D)**
L27 Rodrigo Ledesma-Amaro, Universidad de Salamanca, Salamanca, Spain
- 12.00 – 12.20 **Bio-catalytic synthesis of small molecule oil structuring agents from renewable resources (D)**
L28 Julian Silverman, George John, Department of Chemistry, The City College of New York, and The Graduate Center of The City University of New York, New York, New York

- 12.20 – 12.40 **Online analysis of polycondensations in a bubble column reactor using ATR-FTIR spectroscopy (D)**
L29 Jakob Gebhard, Lutz Hilterhaus, Andreas Liese, Hamburg University of Technology, Hamburg, Germany
- 12.40 – 13.00 **Application of fatty acid chlorides in iron and zinc catalyzed depolymerization reactions (D)**
L30 Stephan Enthaler, TU Berlin, Department of Chemistry, Cluster of Excellence “Unifying Concepts in Catalysis”, Berlin, Germany
- 13.00 – 14.00 **Lunch break**
- 14.00 – 16.00 *Afternoon session*
- 14.00 – 14.20 **Synthesis of Palm oil based ethylhexyl ester for drilling fluid application (D)**
L31 Robiah Yunus, Nur Saiful Hafiz Habib, Zurina Zainal Abidin, Universiti Putra Malaysia, Selangor, Malaysia
- 14.20 – 14.50 **Biobased adhesives: when green chemistry meets the material science of sticky things (M)**
L32 Richard Vendamme, Nitto Denko Corporation's European Research Committee (ERC), Nitto Europe NV, Belgium
- 14.50 – 15.10 **Microwave-assisted heterogeneous catalysis in esterification and etherification reactions (D)**
L33 Sabine Valange¹, Gina Hincapie², Diana Lopez², Clement Allart¹, Joel Barrault¹, ¹ IC2MP, UMR CNRS 7285, ENSIP, 1 rue Marcel Dore, 86022 Poitiers Cedex, France ; ² Institute of Chemistry, University of Antioquia, Medellin, Colombia
- 15.10 – 15.30 **Synthesis and application of cyclic carbonates of fatty acid esters (M)**
L34 Benjamin Schöffner¹, Matthias Blug¹, Daniela Kruse¹, Benjamin Woldt¹, Mykola Polyakov², Angela Köckritz², Andreas Martin², Sebastian Jung³, David Agar³, Bettina Rüngeler⁴, Andreas Pfennig⁵, Karsten Müller⁵, Wolfgang Art⁵, ¹ Evonik Industries AG, Germany; ² Leibniz-Institute for Catalysis e.V., Rostock, Germany; ³ TU Dortmund, Dortmund, Germany; ⁴ RWTH Aachen, Aachen, Germany; ⁵ TU Graz, Graz, Austria; ⁶ University of Erlangen-Nuremberg, Erlangen, Germany
- 15.30 **Poster Award and Closing Remarks**
Best Poster Award
Award committee
- 16.00 **End of Workshop**