Monday, May 30, 2022

15.00  Registration and Welcome Coffee

15.45  Welcome and Opening

Jürgen O. Metzger, abiosus e.V.
Markus Dierker, President of German Society of Fat Research (DGF)
Thomas Seidensticker, TU Dortmund

16.00 – 17.30  First Session

Chair: Thomas Seidensticker

16.00 – 16.30  A personal journey through 15 years of Oleochemistry (M)
L1  Michael A. R. Meier, KIT, Karlsruhe, Germany

16.30 – 17.00  The role of chemists and chemical engineers in a sustainable world (M)
L2  David Cole-Hamilton, University of St. Andrews, UK

17.00 – 17.30  Industrial applications of plant-based hydrocarbons (M)
L3  Markus Dierker, BASF, Düsseldorf, Germany

18.30 – 21.00  Opening Mixer and Poster Session

(M) Main Lecture 30 min. including discussion
(D) Discussion Lecture 20 min including discussion
Tuesday, May 31, 2022

9.00 – 10.50 First morning session

Chair: Mike Meier

9.00 – 9.30 Homogeneous Catalysis for the Functionalization of Oleochemicals: From Laboratory to Miniplant Scale (M)
L4 Thomas Seidensticker, TU Dortmund University, Germany

9.30 – 9.50 Homogeneously transition metal catalyzed oxidation of methyl oleate with H₂O₂ – selectivity control and catalyst separation (D)
L5 Johanna Vondran, Thomas Seidensticker, TU Dortmund University, Germany

9.50 – 10.10 Triphasic gas/liq/liq segmented slug flow reactor for selectivity control in continuous reactions (D)
L6 Niclas von Vietinghoff, Thomas Seidensticker, David W. Agar, TU Dortmund University, Germany

10.10 – 10.30 Chemical Reaction Engineering of Vegetable Oils Epoxidation (D)
L7 Vincenzo Russo, Tommaso Cogliano, Rosa Turco, Pasi Tolvanen, Adriana Freites Aguilera, Tapio Salmi, Riccardo Tessier, Martino Di Serio, Università di Napoli Federico II, Napoli, Italy

10.30 – 10.50 In vivo Synthetic Olefin Metathesis Catalysis in Microalgae Lipid Droplets
L8 Natalie S. Schunck, Stefan Mecking, University of Konstanz, Konstanz, Germany

10.50 – 11.20 Coffee break

11.20 – 12.50 Second morning session

Chair: Thomas Brück

11.20 – 11.50 Conversion of unsaturated fatty acids into industrial speciality and fine chemicals using chemo- and biocatalysts (M)
L9 Harald Gröger, University of Bielefeld, Bielefeld, Germany

11.50 – 12.10 Biocatalytic synthesis of oleochemicals (D)
L10 Robert Kourist, Elia Calderini, Yue Sun, Kamela Myrtollari, Technische Universität Graz, Graz, Österreich

12.10 – 12.30 H₂O₂ tunnel engineering for making robust BVMO to produce oleochemicals efficiently (D)
L11 Eun Ji Seo, Uwe T. Bornscheuer, Jin-Byung Park, a Ewha Womans University, Seoul, Republic of Korea; b Greifswald University, Greifswald, Germany
12.30 – 12.50  Biotechnological production of odour-active fatty aldehydes by α-dioxygenase and aldehyde dehydrogenase (D)
L12  Jean-Philippe Kanter¹, Philipp J. Honold¹, Andreas K. Hammer², Christoph Harms³, Egon Gross³, Uwe Bornscheuer⁴, Marco A. Fraatz¹, Jakob P. Ley³, Holger Zorn¹,²
¹Justus Liebig University Giessen, Giessen, Germany. ²Fraunhofer Institute for Molecular Biology and Applied Ecology Giessen, Germany. ³Symrise AG, Holzminden, Germany. ⁴University of Greifswald, Greifswald, Germany

12.50 – 14.00  Lunch break
Restaurant Davidis

14.00 – 15.30  First afternoon session
Chair: Markus Dierker

14.00 – 14.30  A Review of the Solid-Catalysed Isomerisation of Oleic Acid to Iso-Oleic Acid - How understanding of the reaction at molecular level has led to improved catalyst design and efficiency (M)
L13  Sophie C.C. Wiedemann, Tanja van Bergen-Brenkman, Roel Moonen, Croda Nederland B.V., Gouda, The Netherlands

14.30 – 14.50  Montmorillonite clay catalysts for oleochemical processing (D)
L14  Oscar Kelly, Callum Morris, Adam Mudashiru, Adam Brookbanks, BYK Additives Limited, Widnes, Cheshire, United Kingdom

14.50 – 15.10  Sustainable bio-based surfactants (D)
L15  Gemma Solduga¹, Niklas Thiel², Clariant, Frankfurt¹, Burgkirchen², Germany

15.10 – 15.30  Epoxidized Vegetable oils as additive for Bioplastics (D)
L16  Rosa Turco¹,², Gabriella Santagata², Cinzia Pezzella³, Riccardo Tesser¹, Martino Di Serio¹; ¹Department of Chemical Sciences, University of Naples Federico II, Naples, Italy; ²Institute for Polymers, Composites and Biomaterials, CNR, Pozzuoli, Italy; ³Department of Agricultural Sciences, University of Naples Federico II, Portici, Italy

15.30 – 16.00  Coffee break
16.00 – 17.30  
*Second afternoon session*

*Chair: Luc Averous*

16.00 – 16.30  
**Plant oil-based polymers for closed loop recycling and non-persistency (M)**
*L17  
Stefan Mecking, University of Konstanz, Konstanz, Germany*

16.30 – 16.50  
**Sustainable Syntheses of Non-Isocyanate Polyurethanes based on Renewable 2,3-Butanediol (D)**
*L18  
Anja Kirchberg, Masood Khabazian Esfahani, Michael A. R. Meier, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*

16.50 – 17.10  
**Plant oil based radically polymerizable monomers for sustainable polymers (D)**
*L19  
Sylvain Caillol, ICGM, Univ Montpellier, CNRS ENSCM, Montpellier, France*

17.10 – 17.30  
**Styrene-free thermosetting resins from vegetable oils (D)**
*L20  
Fabio Bertini, Adriano Vignali, Nicoletta Ravasio, Federica Zaccheria, CNR SCITEC “G. Natta”, Milano, Italy*

19.00  
**Conference Dinner**

Restaurant Davidis

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**Wednesday, June 01, 2022**

9.00 – 10.30  
*First morning session*

*Chair: Johannes de Vries*

9.00 – 9.30  
**Biobased polyurethanes based on different macromolecular architectures from different resources (M)**
*L21  
Luc Averous, University of Strasbourg, Strasbourg, France*

9.30 – 9.50  
**A more sustainable chemistry with elemental sulfur surplus: towards the design of novel polymers (D)**
*L22  
Timo Sehn,¹ Daniel Döpping,¹ Patrick Theato,¹,² Hatice Mutlu¹,
¹Soft Matter Synthesis Laboratory, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany, ²Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*
9.50 – 10.10  **Synthesis of fully biobased and reprocessable polyurethane foams (D)**
L23  Baptiste Quienne, Florian Cuminet, Julien Pinaud, Sylvain Caillol*, Institut Charles Gerhardt Montpellier, Université Montpellier, CNRS, ENSCM, Montpellier, France

10.10 – 10.30  **Terpene-Based Biopolymers as Novel Functional Biomaterials - Synthesis, Analysis and Applications (D).**
L24  Malte Winnacker, Magdalena M. Kleybolte, Andreas J. G. Beringer, Technische Universität München, München, Germany

10.30 – 11.00  **Coffee Break**

11.00 – 12.30  **Second morning session**
Chair: Sophie Wiedemann

11.00 – 11.30  **Synthetic biotechnology for material innovation- CO2 conversion to carbon fiber composites and innovative lightweight materials (M)**
L25  Thomas Brück, Technical University of Munich, Munich, Germany

11.30 – 12.00  **Sustainable polymers. Use of renewable resources and recycling (M)**
L26  Johannes de Vries, LIKAT, Rostock, Germany

12.00 – 12.30  **Isomerizing Metathesis as a Concept for the Valorization of Fatty Acid Derivatives (M)**
L27  Lukas J. Gooßen, Ruhr-Universität Bochum, Bochum, Germany

12.30 – 12.45  **Poster Award and Closing Remarks**

Best Poster Award
Award committee: Lukas Gooßen, Harald Gröger, Stephan Mecking

Closing Remarks
Thomas Seidensticker

12.45  **End of Workshop**

13.00  **Closing Lunch**
Restaurant Davidis
Poster

P1 The role of Stabilizers in H₂O₂ for the Peroxyformic Acid Synthesis and Decomposition Kinetics
Riccardo Tesser, Vincenzo Russo, Tommaso Cogliano, Rosa Turco, Rosa Vitiello, Tapiol Salmi, Martino Di Serio, Department of Chemical Science, Università di Napoli Federico II, Napoli, Italy

P2 Büchi „Miniclave“ A suitable tool for the downscale process development of Fatty Acid Ethyl Ester – Biodiesel
Axel Ingendoh, Inachem GmbH, Odenthal, Germany

P3 Ruthenium catalyzed oxidative cleavage of high oleic sunflower oil
L. Santos Correa, M. A. R. Meier, Institute of Organic Chemistry (IOC) and Institute of Biological and Chemical Systems– Functional Molecular Systems (IBCS-FMS), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

P4 Functionalization of oleo chemicals: Developing sustainable processes by integrated catalyst recycling
Astrid I. Seifert¹, Johanna Vondran², Thomas Seidensticker², Kerstin Wohlgemuth¹, ¹TU Dortmund University, Laboratory of Plant and Process Design, Dortmund, Germany, ²TU Dortmund University, Laboratory of Industrial Chemistry, Dortmund, Germany

P5 Synthesis of linoleic acid hydroperoxides using immobilized LOX for the application in a flow reactor system
Valentin Gala Marti, Ulrich Schörken, Faculty of Applied Natural Sciences, TH Köln, Leverkusen, Germany

P6 Pd-Nanoparticles in Multi-Phase Catalysis: Semi-Hydrogenation of Poly-Unsaturated Fatty Acid Derivatives
Maximilian Spiekermann, Florian Lehmann, Thomas Seidensticker, Laboratory of Industrial Chemistry, Department of Biochemical and Chemical Engineering, TU Dortmund University, Dortmund, Germany

P7 Organic Solvent Nanofiltration: Recycling of an unmodified Grubbs-Hoveyda catalyst in the self-metathesis of cardanol
Alexander Kühl, Daniel Fakesch, Dieter Vogt, Thomas Seidensticker Laboratory of Industrial Chemistry, Department of Biochemical and Chemical Engineering, TU Dortmund University, Dortmund, Germany

P8 Synthesis of amino-functionalized oleochemicals via hydroaminomethylation with integrated catalyst recycling
Anna Kampwerth, Dieter Vogt, Thomas Seidensticker, Laboratory of Industrial Chemistry, Department of Biochemical and Chemical Engineering, TU Dortmund University, Dortmund, Germany
Synthesis of fatty amines by homogeneously catalyzed amination of fatty alcohols
Christian Heider, Dominik Pietschmann, Alina Winter, Dieter Vogt, Thomas Seidensticker, Technical University Dortmund, Laboratory of Industrial Chemistry, Dortmund, Germany

Intensification strategies for homogeneously catalyzed hydroformylation of oleo chemicals in aqueous multiphase systems: Utilizing the "chaos"
T. Roth, M. Heyng, D. Vogt, T. Seidensticker, TU Dortmund University, Laboratory of Industrial Chemistry, Dortmund, Germany

Hydroaminomethylation of oleochemicals in a continuously operated miniplant
Tim Riemer, Thomas Seidensticker, Dieter Vogt, Laboratory of Industrial Chemistry, Department of Biochemical and Chemical Engineering, TU Dortmund University, Dortmund, Germany

Application of multiphase systems for the intensified production of furans from biomass
Nico Thanheuser¹, Jesús Esteban², Andreas J. Vorholt¹, ¹Max-Planck-Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany, ²Department of Chemical Engineering. The University of Manchester, Manchester, United Kingdom

Catalysis and Chemical Reaction Engineering for Biolubricants Productions
Rosa Vitiello, Francesco Taddeo, Rosa Turco, Vincenzo Russo, Riccardo Tesser, Martino Di Serio; Department of Chemical Science, Università di Napoli Federico II, Napoli, Italy

Pulsed Electric Field (PEF) Treatment for Lipid Extraction from Microalgae
Aude Silve, Natalja Nazarova, Rüdiger Wüstner, Wolfgang Frey, Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology, Karlsruhe, Germany

Polythiomalonamides: Renaissance of Industrial Waste, i.e. Elemental Sulfur, in Functional Materials
Timo Sehn¹, Patrick Theato¹,², Hatice Mutlu¹, ¹Soft Matter Synthesis Laboratory, Karlsruhe Institute of Technology (KIT) Eggenstein-Leopoldshafen, Germany,² Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

Cost Effective Marriage of Poly(dithiocarbonates) with Elemental Sulfur
Timo Sehn, Hatice Mutlu, Soft Matter Synthesis Laboratory, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany

Synthesis of vinyl monomers from commercial olive oil via transesterification with N-hydroxyethyl acrylamide
Oliver J. Harris and Fiona L. Hatton, Department of Materials, Loughborough University, Loughborough, LE11 3TU
Optimized reaction conditions for the synthesis of 12-opda
Tim Lukas Guntermann¹; Karl-Josef Dietz²; Harald Gröger¹. ¹Faculty of Chemistry, Bielefeld University, Bielefeld, Germany, ²Faculty of Biology, Bielefeld University, Bielefeld, Germany