

Hanse Chemistry Symposium 2019

Joint Symposium 'Future Trends in Sustainable Catalysis' LIKAT / UK Catalysis Hub

Changing industrial production of chemicals and materials from polluting stoichiometric methods to sustainable catalytic production based on renewable feedstocks is a tremendous challenge.

The Leibniz Institute for Catalysis, LIKAT Rostock and the UK Catalysis Hub are joining forces to address this problem. The envisaged long-term collaboration will start with a symposium about present challenges and future solutions in this exciting field.

LIKAT is one of the largest publicly-funded research institutes in Europe in the area of applied catalysis. Its areas of expertise are arranged both according to the various methods employed and according to the materials being studied. The main objectives of LIKAT's scientific projects range from the acquisition of new knowledge in catalysis research (and its applications) to technical utilisation of such new knowledge. The strategic goals of LIKAT are to define and shape the development of relevant catalysis research for areas of economic activity which hold potential for the future, and also to put into effect new catalysis-based applications in these areas.

The UK Catalysis Hub is Consortia of British universities involved in Catalysis research lead by Cardiff, Bath and Manchester. UK catalytic science currently has a strong presence, but there is a need for UK industrial activity to shift towards new innovative areas posing major challenges for the future. In light of these challenges the UK Catalysis Hub has evolved in a leading institution, both nationally and internationally, in the field and acts to coordinate, promote and advance the UK catalysis research portfolio, with a strong emphasis on effective use of the world-leading facilities on the RAL campus.

Thursday 16th May in the LIKAT (HRO, Albert-Einstein-Str. 29a, R 1.311)

<i>Session 1</i>	<i>Chair: Matthias Beller</i>
09:00	Chris Hardacre, University of Manchester; <i>Hydrogen production using photocatalytic and non-thermal plasma catalytic methods</i>
09:45	Volker Brüser, INP Greifswald; <i>Conversion of CO₂ and hydrocarbons to value-added chemicals using plasma-assisted catalysis</i>
10:15	Evgenii Kondratenko, LIKAT Rostock; <i>Active sites, design and performance of supported VO_x-based and bulk ZrO₂-based catalysts for alkane dehydrogenation</i>
10:45	<i>Coffee break</i>

Session 2 *Chair: Graham Hutchings*

11:15 Jan von Langermann, University of Rostock; *Integration of Separation Techniques into Biocatalytic Processes for the Synthesis of Enantiopure Compounds*

11:45 Sebastian Wohlrab, LIKAT Rostock; *Methane conversion beyond traditional routes*

12:30 *Lunch and poster session*

Session 3 *Chair: Ralf Ludwig*

14:00 Andy Marr, Queens University Belfast; *Catalysis in Soft Matter: Entrapping homogeneous catalysts, acids and bases in ionic liquid gels*

14:30 Amanda Jarvis, University of Edinburgh; *Artificial metalloenzymes for chemical synthesis*

15:00 Ulrich Hintermair, University of Bath; *Mechanistic Insight into Homogeneous Catalysis from Multi-Nuclear High Resolution FlowNMR Spectroscopy*

15:30 Coffee break

Session 4 *Chair: Michael Lalk*

16:00 Haijun Jiao, LIKAT Rostock; *Computational Understanding into Hydrogenation and Dehydrogenation Reaction Catalyzed by Well-Defined PNP Pincer Complexes*

16:30 Marta Falkowska, University College London; *Total Neutron Scattering integrated with NMR to Study Heterogeneous Catalysis*

17:00 Esteban Mejia, LIKAT Rostock; *Persistent Radical Cations as Catalysts for Aerobic Oxidative Amine Coupling Reactions*

17:30 Matt Davidson, University of Bath; *Development of highly active, selective and robust initiators for industrial production of polylactide, PLA*

18:15 *Dinner*

Friday 17th May in the LIKAT (HRO, Albert-Einstein-Str. 29a, R 1.311)

Session 5 *Chair: Adrian Mulholland*

09:00 Matthias Höhne, University of Greifswald; *Identification, optimization and creation of novel enzymes for synthesizing chiral building blocks*

09:45 Arun Chutia, University of Lincoln; *The local electronic properties of Cu, Au and CuAu clusters on the CeO₂(110) surface*

10:15 Christoph Kubis, LIKAT Rostock; *In situ spectroscopy and applied chemometrics for the study of kinetic and mechanistic aspects of alkene hydroformylation*

10:45 *Coffee break*

Session 6 *Chair: Paul Kamer*

11:15 Paul Webb, University of St Andrews; *Crystallite size effects in catalysis: Does the metal-support interface play a role?*

11:45 Christian Hering-Junghans, LIKAT Rostock; *Preparation and Reactivity of Bulky Pyridinediphosphaalkene Ligands*

12:15 Jennifer Strunk, LIKAT Rostock; *Photocatalytic CO₂ Reduction: Where to go from here?*

13:00 End