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Solar Energy Conversion

UCD School of Chemistry & Chemical Biology



Seminar Series

Catalysis - A Key Technology for Benign Organic Synthesis and Energy Technology

Professor Matthias Beller

Leibniz-Institut für Katalyse an der Universität Rostock, Germany

Friday 11th May 2012 at 2.00pm

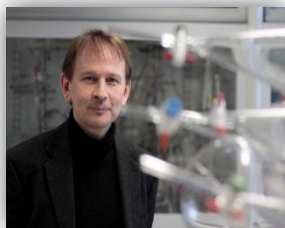
CSCB Seminar Room, UCD Science Centre, ALL Welcome



Despite numerous important methodological advancements in all areas of chemistry, still most organic synthesis as well as the industrial production of chemicals can be improved.

Currently, more than 80% of all products of the chemical industry are made via catalysis. In this regard, the development of new and more efficient catalysts constitutes a key factor for achieving a sustainable production of all kinds of chemicals today and in the future. In the talk it will be shown that recently developed molecular-defined as well as nano-structured iron catalysts enable academic chemists to

perform their organic syntheses with high yields and selectivity. In the future, also for industrial processes improved economics might be expected. Examples which demonstrate the superiority of catalytic processes with bio-relevant metal complexes compared to more traditional catalytic reactions will include hydrogenations and dehydrogenations, and other redox reactions. In addition, the need for drastically improved catalysts for challenging "dream reactions" in the area of environmentally benign energy technologies will be highlighted.



Matthias Beller studied chemistry at the University of Göttingen, where he completed his PhD thesis in 1989. He received a Liebig scholarship and spent a year with Prof. Sharpless, MIT. 1991-1995, Beller was an employee of Hoechst AG in Frankfurt, where he directed the "Homogeneous Catalysis" project. He then moved to the Technical University of München as C3 Professor for Inorganic Chemistry.

In 1998 he relocated to the University of Rostock to head the Institute for Organic Catalysis (IfOK). Since 2006, Beller is director of the newly formed Leibniz-Institute for Catalysis.

His scientific work has been so far published in >500 original publications and review articles. In addition, >90 patent applications have been filed in the last decade.

Beller has received several awards including: the Novo Nordisk-Lecturer (2005), the Leibniz-Price of the Deutsche Forschungsgemeinschaft (2006), "Entrepreneur of the Year" of the city of Rostock and the German Federal Cross of Merit (2006). In 2010, he was presented with the first "European Sustainable Chemistry Award" and the "Paul-Rylander Award" of the Organic Reaction Catalysis Society of the US.

Beller is head of the German Chemical Society working group "Sustainable Chemistry" and a member of several associations including the German National Academia of Science "Leopoldina". He is also chair of the editorial board for ChemSusChem.

Please visit www.catalysis.de for more information.