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First Laureate of the Newly Launched "European Sustainable Chemistry Award"

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For the first time, the European Association of Chemical and Molecular Sciences (EuCheMS) will confer the European Sustainable Chemistry Award of 10,000 Euro on the occasion of the 3rd EuCheMS Chemistry Congress in Nuremberg on August 29, 2010. Out of 21 nominees, Professor Dr. Matthias Beller, managing director of the Leibniz Institute for Catalysis (LIKAT) in Rostock (Germany), has been chosen as the first laureate by a commission delegated with this task. The 48 year-old chemist, who is also chair of the Sustainable Chemistry division of the German Chemical Society (Gesellschaft Deutscher Chemiker, GDCh), will be distinguished for his exceptional research in the field of homogeneous catalysis, whereby he and his team at LIKAT are mainly investigating the environmentally sustainable conversion of small molecules in more valuable substances.

Born in the Hessian town of Gudensberg, Beller studied chemistry at the University of Göttingen where he received his doctoral degree in 1989 in less than seven years of university study. After a postdoctoral fellowship at Massachussetts Institute of Technology in Cambridge, USA, he assumed a position as laboratory director and, later on, became the group and project director of "Metallo-organic Chemistry—Catalysis" in the main laboratory of Hoechst AG in Frankfurt. In 1996, Beller received an associate professorship at the Technical University of Munich. Then, in 1998 Beller was named director of the Institute for Organic Catalysis Research e.V. (IfOK), in which this new position was linked with a full professorship in "Catalysis" at Rostock University. Since 2005, he has been managing director at LIKAT which originated from the restructured IfOK. LIKAT is the largest state research institute for applied catalysis in Europe. This institute focuses on the transfer of fundamental research to practical applications. In the past decade alone, Beller and his team have developed three catalyst systems that meanwhile are being applied in industry for producing chemicals on a large scale (tonnes). In addition, companies producing fine chemicals and catalysts are marketing catalysts developed at LIKAT.

Moreover, Beller has conducted fundamental research that has been taken over by some research groups throughout the world. Here, too, the concept of sustainability is a priority. According to Beller, "Catalysis: this is the science that tries to explain how chemical reactions can be accelerated and controlled; it is also one of the key technologies for creating a sustainable chemistry."

The focal points of Beller's research are: palladium-catalyzed coupling reactions of aryl halogenides, enatioselective oxidation catalysis, catalytic applications in the field of active pharmaceutical ingredients as well as catalytic carbonylations.

Oxidation reactions catalyzed by metal complexes are quantitatively the most important homogeneously catalyzed reactions in the chemical industry. Within the framework of 'sustainable development', the use of environmentally friendly and cost-effective oxidants is a primary target of research efforts at LIKAT. The various research projects concentrate on the development of catalytic oxidation reactions with oxygen or hydrogen peroxide as oxidant.

Within the scope of exploiting catalytic reactions for synthesizing new pharmaceutical ingredients, Beller's research group is intensively investigating, in particular, the regioselective addition of amines to double bonds and carbonylation reactions. In cooperation with pharmaceutical companies, the aim of the research here is the development of new analgesics, anti-Alzheimer active ingredients and kinase inhibitors.

Carbonylation reactions, being developed in cooperation with industrial companies, include oxo reactions of large-scale produced olefin mixtures. It could be shown that it is feasible to selectively react technical-grade olefin mixtures to a target product. These research works have been published and highlighted in the reputable science journal "Science".
Beller has already received numerous awards. Moreover, he has been honored with the Karl-Zielgeler-Giulio-Natta Lectureship; he will give this lecture in Italy this year. Moreover, he is actively involved in many scientific organizations, advisory committees and editorial boards of scientific journals. Professor Beller is also a member of the Academy of Sciences in Hamburg and of the German Academy of Sciences Leopoldina. He has published more than 420 papers and has filed over 90 patents.

To raise the profile of sustainable chemistry and be a spur to innovation and competitiveness, EuCheMS has launched the European Sustainable Chemistry Award. With the encouragement of the European Environment Agency (EEA), the support of SusChem (European Platform for Sustainable Chemistry) of CEFIC (European Chemical Industry Association) and several companies oft he chemical industry and under the patronage of Nobel Laureates Gerhard Ertl and Jean-Marie Lehn, the first European Sustainable Chemistry Award will be presented during the 3rd EuCheMS Chemistry Congress. The Gesellschaft Deutscher Chemiker (GDCh, German Chemical Society) has established a number of named lectureships to recognize outstanding contributions to chemistry. A particular example is the August-Wilhelm-von-Hofmann-Lectureship, named after the founding President of the Deutsche Chemische Gesellschaft. With several European chemical societies the GDCh has established reciprocal name lectures. One of these is the Karl Ziegler - Giulio Natta-Lectureship with the Società Chimica Italiana which invited Professor Dr. Matthias Beller to present lectures in Italy this year in November.