

CATALYSIS - A FUNDAMENTAL PERSPECTIVE

Prof. Dr. Robert Schlögl

Fritz Haber Institute of the Max Planck Society
Max Planck Institute for Chemical Energy Conversion



ETH Hönggerberg, 07/10/2015

HCI G 3, 17.00 h

The seminar will be followed by an Apéro

Abstract. Catalysis is a basic phenomenon in chemistry controlling the temporal evolution of molecular conversion processes (kinetics). Nature controls the multiple chemical systems of life with catalysis and we build much of our civilization on it. The desire to fully understand catalysis allowing prediction and control is thus a cultural as much as a scientific challenge. We have come a long way to understand many aspects of it in microscopic and macroscopic dimensions of time and space. The still lacking success to achieve full control over catalytic processes rests to a large extent upon incomplete insights in the supra-molecular aspects for which we just begin to develop insights. Using examples of industrial chemical relevance we will discuss that the dynamic nature of catalysts, which is not yet encoded in our standard model is the missing link between physical and technical chemistry. Forming this link will allow us to meet the novel challenges arising from managing the necessary changes in the feedstock of chemical industry as well as in integrating renewable energy sources in our mixture of energy

Speaker highlights. Robert Schlögl studied chemistry and completed his PhD at Ludwig Maximilians University in Munich. After post-doctoral stays at Cambridge and Basle and a professorship at University Frankfurt, in 1994 he became a director at the Fritz Haber Institute of the Max Planck Society in Berlin. In 2011 he was appointed founding director of the Max Planck Institute for Chemical Energy Conversion in Mülheim a.d. Ruhr. He is an Honorary Professor at Technical University Berlin, at Humboldt University Berlin and at University Duisburg-Essen. His research mainly focuses on inorganic chemistry, heterogeneous catalysis, nanostructures, material science for chemical energy conversion and concepts for sustainable energy supply and storage.