

The BasCat Approach Towards Atomistic Understanding of Heterogeneous Catalysis: Bridging Academia and Industry

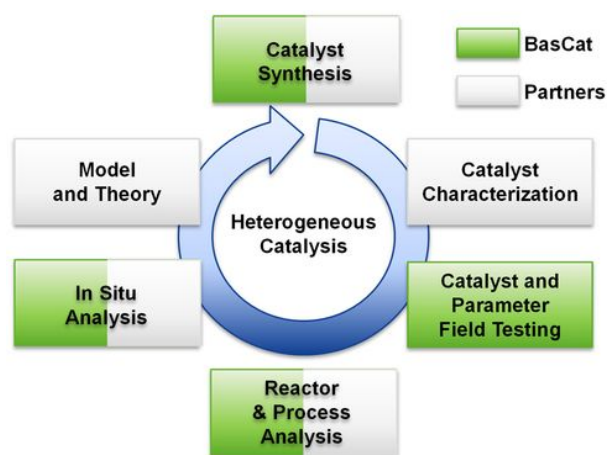
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In 2012, the unique joint lab BasCat was established at the campus of the Technical University Berlin, which bundles very successfully the scientific expertise of the cluster of excellence UniCat with that of BASF SE. Its main objective is to gain a deeper atomistic and mechanistic understanding of the complex field of oxidation catalysis on a fundamental level by taking advantage of a collaborative team covering the whole spectrum of knowledge and experience needed in heterogeneous catalysis research. Two representative research areas will be presented in my talk to highlight the advantageous comprehensive research approach: a) Using the technique of Atomic Layer Deposition (ALD) for a better atomistic understanding of the role of phosphorus in vanadium pyrophosphate (VPO) catalyst for the strikingly high selective oxidation of butane to maleinic acid anhydride, and b) on how to boost the chemoselectivity for direct conversion of syngas (CO, H₂) to ethanol using the molecular single-source precursor approach.

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Author Biography:

Matthias Driess is full professor of metalorganics and inorganic materials at the Department of Chemistry of Technical Universität Berlin since 2004. He obtained his Ph.D. degree in 1988 and completed his habilitation at the University of Heidelberg (Germany) in 1993. He serves as spokesperson of the Cluster of Excellence UniCat, is co-director of the UniCat-BASF joint laboratory (BasCat), vice-chair of the Einstein Centre of Catalysis (EC2), and director of the Chemical Invention Factory (CIF) in the Berlin area

University/Institute: Technical University Berlin/Department of Chemistry, Germany

Research Interest: Organometallic chemistry, homogeneous and heterogeneous catalysis

