

UniCat Colloquium

PROF. RONG CHEN

Huazhong University of Science and Technology, China

Design and synthesis of catalytic nanoparticles via area selective atomic layer deposition

Supported metal nanoparticles are among the most important catalysts for many practical reactions. The catalytic performance strongly depends on the size, composition, and structure of the metal nanoparticles as well as the surrounding supports. A promising new method of catalyst synthesis is atomic layer deposition (ALD). ALD is a variation of chemical vapor deposition wherein materials are deposited on targeted surfaces via a sequential self-limiting reaction. The self-limiting nature ensures highly conformal and uniform deposition over high aspect ratio surfaces. Combined with self-assembled monoalyers, it is possible to achieve 3D control of metals, oxides, and other compound materials growth via area-selective ALD. Hence, design and synthesis of advanced catalysts at the nanoscale becomes possible through precise control over the size and composition of nanoparticles, the catalytic active surfaces, and the structure of protective layer. In this seminar, the application of area-selective ALD to synthesize core-shell bimetallic nanoparticles and selective oxide overcoats will be described. With atomically-precise shell thickness control, and unique structure of oxides overcoats to stabilize metal nanoparticles, enhanced catalytic activity, selectivity and stability could be achieved.

Wednesday, November 02, 2016 at 5:15 PM

TU Berlin, Institute of Chemistry
Straße des 17. Juni 115, 10623 Berlin

Building C, Lecture Hall **C 264**

Prof. Dr. Driess (TUB)

Organizer

Coffee and cake will be served 30 minutes before the lecture. Guests are cordially invited to attend!
Prof. Dr. Matthias Driess - Chair of the Cluster of Excellence UniCat - www.unicat.tu-berlin.de



Freie Universität Berlin

