

## UniCat Colloquium

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Lecturer: **Prof. Chia-Kuang (Frank) Tsung**, Theoretical and Physical Chemistry, Department of Chemistry, Boston College, MA, USA

Title: **Rational design of heterogeneous catalysts by using colloidal synthesis**

Abstract: Recent advances in colloidal synthesis enable the precise control of nanoparticles and make the rational design of new type heterogeneous catalysts promising. We have developed series colloidal method strategies for synthesizing nanoparticles with morphology control and nanoparticles with porous core-shell nanostructures. Size and shape dependent catalytic performances were demonstrated by using shaped nanoparticles and high thermal stability were demonstrated by using core-shell structures. We have further developed a new class of nanocrystal tandem catalysts that have multiple metal-metal oxide interfaces for the catalysis of sequential reactions. The distinct metal-metal oxide interfaces were used to catalyze two distinct sequential reactions. The new concept of nanocrystal tandem catalysis represents a powerful approach towards designing high-performance, multifunctional nanostructured catalysts.

Date: **Wednesday, December 19, 2012**

Time: **5:15 pm - around 6:45 pm**

Location: **TU Berlin,  
Department of Chemistry  
Straße des 17. Juni 115,  
10623 Berlin  
Building C,  
Lecture Hall C 264**

Organiser: **Dr. Ralph Kraehnert (TUB)**

Coffee and tea will be served thirty minutes prior to the lecture start.  
**Guests are cordially invited to attend!**

Prof. Dr. Matthias Driess, Chair of the Cluster of Excellence UniCat