



Vortragsankündigung

- im Rahmen des UniCat-Kolloquiums -
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- Es spricht: **Prof. Dr. H.-D. Wiemhöfer**, Westfälische Wilhelms-Universität, Institut für Anorganische und Analytische Chemie, Münster
- Zeit: **Mittwoch, 17. Juni 2009** 17:15 Uhr
- Ort: **TU Berlin**
Institut für Chemie, Altes Chemiegebäude
Straße des 17. Juni 115, 10623 Berlin
Raum C 243
- Thema: **Ionics and electronics of functional materials based on zirconia and ceria**
- Abstract: Mixed ion and electron conducting compounds represent an important and versatile class of functional materials. Examples for applications are electrodes in batteries, fuel cells, electrochromic displays and chemical sensors. This contribution focuses on properties of electron and oxygen ion conducting functional materials derived from ceria and zirconia and on electrochemical techniques to study concentration and mobility of ions and electrons. Ceramics based on doped ceria are in widespread use, for instance, as anode additives and electrolyte layers in high temperature fuel cells, but also as fast oxygen storage components and redox mediators in heterogeneous catalysis and as redox active nanoparticles even down to room temperature. With regard to the excellent ability of ceria and some of its solid solutions to exchange oxygen with the surroundings, a considerable interest focuses on the role of dopants in modifying the concentration and mobility of electrons which are the rate limiting species. Concepts and recent results will be illustrated on a series of differently doped oxides of zirconium and cerium with high oxygen ion mobility as well as strategies to increase or decrease the electronic conductivity.

Organisator: Prof. Dr. Helmut Schubert ((TUB)

Gäste sind herzlich willkommen!

Prof. Dr. Matthias Driß
Sprecher des Exzellenz-Clusters UniCat