Graz Advanced School of Science
PHYSICS COLLOQUIUM OF THE UNIVERSITY OF GRAZ AND
THE GRAZ UNIVERSITY OF TECHNOLOGY

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Models for Heterogeneous Catalysts: Complex Materials at the Atomic Level

Abstract:

Our understanding of catalysis, and in particular heterogeneous catalysis, is to a large extend based on the investigation of model systems. The enormous success of metal single crystal model surface chemistry, pioneered by physical chemists, is an outstanding example. In-creasing the complexity of the models towards supported nanoparticles, resembling a real disperse metal catalyst, allows one to catch in the model some of the important aspects that cannot be covered by single crystals alone. One of the more important aspects is the support particle interface. We have developed strategies to prepare such model systems based on single crystalline oxide films, which are used as supports for metal, and oxide nanoparticles, which may be studied at the atomic level using the tools developed in surface science.
However, those oxide films may also serve as reaction partners themselves, as they are models for SMSI states of metal catalyst. Using such model systems, we are able to study a number of fundamental questions of potential interest, such as reactivity as a function of particle size and structure, influence of support modification, as well as of the environment, i.e. ultra-vacuum or ambient conditions, onto reactivity.

Date:	Tuesday, June 19, 2018, 17:00
Location:	Lecture Hall 05.01, Institute of Physics, University of Graz, Universitätsplatz 5
	16:30 meet the speaker tea, Library of Experimental Physics, Institute of Physics, Universitätsplatz 5, 1st floor, room 122
Host:	Prof. M. Sterrer – Institute of Physics – Experimental Physics – Surface Science

For a regularly updated colloquium program see: http://www.if.tugraz.at/colloquium.html