Ortsverband Kaiserslautern

VORTRAGSANKÜNDIGUNG

Professor Stuart Mackenzie

University of Oxford, Physical and Theoretical Chemistry Laboratory,

stuart.mackenzie@chem.ox.ac.uk

“Driving reactivity on isolated transition metal clusters:
Catalysis in a world where every atom counts”

Inhalt:

Isolated (gas–phase) metal clusters have long been proposed as experimentally and computationally tractable model systems for heterogeneous catalysts. In part this is due to the array of experimental techniques which can be applied to explore key features of reactivity. This talk will present a variety of such techniques and demonstrate their capability in exploring the entrance channel region of the reactive potential energy surface.

I intend this as a rather general (and hopefully accessible) talk with an emphasis on general themes rather than tedious details. It will introduce a wide range of experimental techniques from single-collision studies, through spectroscopy to infrared driven chemistry and will highlight the type of information each of these can yield in conjunction with modern quantum chemical simulations.

The key information provided includes:

- Cluster size effects in reactivity
- Geometrical (i.e., isomeric) structures
- Spectroscopy of isolated and decorated transition metal clusters
- Determination of reaction and desorption barrier
- Interaction with a black-body radiation field

Finally, new prospects for determining exit channel dynamics via product quantum state distributions will be outlined.

Relevant articles:


Dienstag, den 14. April 2015 — 17.15 Uhr

Gebäude 52 — Hörsaal 207

Gäste sind herzlich willkommen

ges. Prof. Dr. Elke Richling