

EINLADUNG

zum Vortrag von

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Single-Atom Catalysis: An Atomic-Scale View

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Dienstag, 10. November 2015, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract

Single-atom catalysis is a hot topic in the catalysis literature, but exactly how a single Au or Pt atom sitting on a cheap oxide support can catalyse a chemical reaction remains clouded in mystery. In this seminar, I will describe a new model system we have developed that can shed new light on this controversial topic; on $\text{Fe}_3\text{O}_4(001)$, we can stabilize ordered arrays of metal atoms (of any variety) with a nearest neighbour distance of 8.4 Å to temperatures as high as 700 K. This allows us to follow key processes atom-by-atom using scanning tunnelling microscopy. In the second half of the talk, I will show our most recent progress toward understanding the stability, reactivity and aging of single atom catalysts, and discuss how one might be able to tailor such a system to target specific reactions.

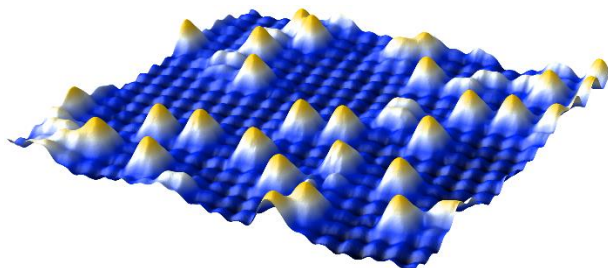


Figure: STM image of Au adatoms on the magnetite $\text{Fe}_3\text{O}_4(001)$ surface at room temperature.

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Vorsitzender 2014/15: Univ.Prof. Dr. Friedrich Aumayr, TU Wien, Institut für Angewandte Physik