

# EINLADUNG

zum Vortrag  
von

**Francesco Allegretti**

Surface and Interface Physics Department, TU Munich

**Self-assembled molecular structures at metal surfaces:  
conformation, charge transfer and functionality**

am

**Dienstag, 18. Juni 2013 um 16:00**

Technische Universität Wien, Institut für Angewandte Physik  
Seminarraum 134A, Turm B (gelbe Leitfarbe), 5. OG  
1040 Wien, Wiedner Hauptstraße 8-10

## Abstract:

The self-assembly of functional molecules at surfaces is a powerful tool to engineer novel low-dimensional architectures with tailored properties, thanks to the versatile library of tectons that organic chemistry can provide. This approach is of interest in many fields of fundamental and applied research, such as heterogeneous catalysis, dye-sensitized solar cells, molecular electronics and spintronics, gas sensing. In my talk I will focus on two classes of systems selected from our current research, and I will show the interplay of physical phenomena that occur when relatively complex (at least from a surface science perspective) molecules adsorb and self-assemble on surfaces. I will first present our recent work on tetrapyrrole macrocyclic compounds on coinage metal surfaces, which shows the competition of different interactions, electronic and conformational changes, and also highlights viable routes to tune the functionality of these hybrid interfaces. Secondly, I will turn to the study of the bonding, stability and charge transfer dynamics of self-assembled monolayers of short-chain aromatic thiols and carboxylic acids deposited onto the more reactive Ni(111) surface. The experimental investigation is based on a number of synchrotron-based electron spectroscopies under ultra-high-vacuum conditions, which provide extensive insight into the electronic and structural properties of these model systems at the submolecular level.

**FWF SFB F45 „Functional Oxide Surfaces and Interfaces (FOXSI)“**

Prof. Günther Rupprechter (Speaker), Melanie Schärer (SFB FOXSI Secretary)

Vienna University of Technology, Institute of Materials Chemistry, 1060 Vienna, Getreidemarkt 9, Austria

Tel.: +43-(0)1 58801-165102 - Fax: +43-(0)1 58801-16599

e-mail: [grupp@imc.tuwien.ac.at](mailto:grupp@imc.tuwien.ac.at), e-mail: [melanie.schaerer@tuwien.ac.at](mailto:melanie.schaerer@tuwien.ac.at)

web: <http://foxsi.tuwien.ac.at/>