

# EINLADUNG

zum Vortrag  
von

**Matthias Batzill**

Dept. of Physics, University of South Florida, Tampa  
USA

**Graphene interfaces: CVD growth on Ni, Y2O3-monolayer,  
and interface charge doping**

am

**Montag, 07. Juli 2014, 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:

In this presentation I discuss CVD growth and interface properties of graphene studied by electron spectroscopy (XPS, AES, UPS) and microscopy (LEEM, STM). The first part of my talk focuses on (monolayer) graphene growth on nickel surfaces in vacuum by chemical vapor deposition. We discuss the growth modes as a function of growth temperatures and competing carbon containing surface phases and illustrate the synthesis of periodic, linear 1D-defects embedded in graphene.

The second part discusses interfaces between metal/graphene/oxide sandwich structures. We demonstrate that yttria (Y2O3) forms a complete wetting layer on metal-supported graphene and may even form a crystalline well-ordered film on graphene. Using x-ray photoemission spectroscopy (XPS) we demonstrate variation in charge doping of graphene depending on the combination of the metal and the oxide between the graphene-layer is sandwiched.

Finally, we show that CVD-grown graphene may be transferred in solution to oxide materials and characterized in UHV with photoemission and scanning tunneling microscopy. Such transferred graphene may form useful graphene model systems, other than the metal-supported graphene, for future surface science studies.

**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/>