

# UniCat Colloquium

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Lecturer: **Prof. Dr. Peter Burger**, Institute of Anorganic and Applied Chemistry, University of Hamburg

Title: **Fun with Oxos and Nitridos**

Abstract: Complexes of electron rich late transition metals with terminal metal-ligand multiple bonds, e.g.  $M=O$  or  $M\equiv N$ , are still an exclusive class of compounds. Our recent contribution to this field comprises the syntheses, isolation and reactivity studies of square-planar  $d^6$ -configured rhodium and iridium nitrido coordination complexes. Based on comprehensive experimental (XAS, XPS) and theoretical investigations (DFT, CASPT2) of the electronic structure, we propose a terminal  $M\equiv N$  triple bond. The observed reaction of the iridium nitrido complex with  $H_2$  to the corresponding amido complex presents to the best of our knowledge the first example for direct hydrogenation of a metal nitrido unit. In addition to mechanistic studies of this and related transformations, the impact of this result on the design of novel Haber-Bosch catalysts will be discussed.

Date: **Wednesday, 10 February 2010**

Time: **5:15 pm - around 6:45 pm**

Location: **TU Berlin  
Institute of Chemistry, Building C  
Straße des 17. Juni 115, 10623 Berlin  
room C 243**

Organiser: Prof. Dr. Helmut Schwarz (TUB)

Coffee and tea will be served thirty minutes prior to the lecture start.  
Guests are cordially invited to attend!

Prof. Dr. Matthias Driess, Chair of the Cluster of Excellence UniCat