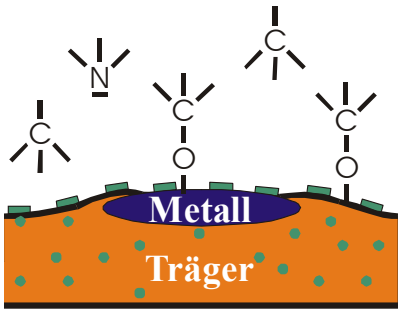
Ruhr-Universität Bochum



SFB 558
„Metall-Substrat-Wechselwirkungen in der heterogenen Katalyse“

Einladung zum Vortrag von

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Utrecht, Netherlands
(Gast von Prof. Muhler)

" Thema"

"Tunable carbon nanofiber based Ni and Pt catalysts for hydrogenation reactions"

Catalyst supports based on carbon nanofibers (CNF) combine the advantages of both active carbons and graphite i.e., CNF have a large surface area, are well-defined, inert, non microporous and can be prepared without contaminants. Moreover the surface of CNF can be modified by chemical treatments like oxidation. This treatments result in the formation of oxygen-containing groups on the surface of the CNF which play an important role both in catalysis and catalyst preparation. In general, while preparing catalysts the oxygen groups serve as deposition sites for the metal precursors, in addition sintering of the metallic particles is prevented. Different synthesis routes and role of the different oxygen groups in anchoring and stabilizing Ni and Pt particles will be discussed.
In catalysis the oxygen-containing groups can have a pronounced effect on the activity and selectivity of the materials. It will be shown that the intrinsic activity of Pt/CNF for the hydrogenation of cinnamaldehyde could be increased with a factor of 300 by the removal of 97% of the initially present acidic oxygen-containing groups. Please note that these oxygen containing groups were essential for the preparation of highly dispersed metal particles on CNF.
Though not fully understood yet a model will be presented which can explain the catalytic behavior of Pt/CNF catalyst for cinnamaldehyde hydrogenation, as function of the concentration of oxygen containing groups on the CNF surface.

Termin:	**17.02.04**
Zeit:	**11.15 Uhr**
Ort:	**HNC 5/99**

Gäste sind herzlich willkommen.