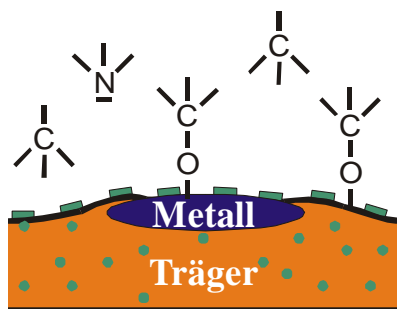


# Ruhr-Universität Bochum



**SFB 558**

## **„Metall-Substrat-Wechselwirkungen in der heterogenen Katalyse“**

**Einladung  
zum Vortrag von**

**Prof. Dr. Giancinto Scoles**

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(Gast von Prof. Wöll)

### **“Electron tunneling through molecular media”**

**ABSTRACT:** We discuss an experimental and theoretical study of the electronic properties of dithiols sandwiched between two, parallel, Au(111) surfaces. The influence of the distance between the two surfaces and of the chemical nature and length, tilt angle, and coverage of the thiols on the local density of states (LDOS) at the Fermi energy ( $E_f$ ) has been explored. For alkylthiols, we calculate that the value of the LDOS at  $E_f$  near the center of the molecular wires ( a quantity that is related to the tunneling current near zero bias ) is mainly determined by the length of the alkane chains. The tilt angle of the molecular wires with respect to the surfaces ( and , therefore, the distance between the surfaces ) has a very small influence on the LDOS at the center of the molecule, while the effect of coverage can be completely ignored. Experimentally we have carried out differential tunneling current measurements of different thiol monolayers using conductive-tip AFM and nanografting. Whenever possible the experimental results shall be compared with the results of the theoretical study.

<b>Termin:</b>	<b>14.06.2005</b>
<b>Zeit:</b>	<b>11.15 h</b>
<b>Ort:</b>	<b>HNC 5/99</b>

***Gäste sind herzlich willkommen.***