



SFB616

Energiedissipation an Oberflächen

UNIVERSITÄT
DUISBURG
ESSEN

**1. Februar 2011 / 10 Uhr c.t., Raum MG 272
Campus Duisburg**

Für diese Zeit steht eine Kinderbetreuung nach vorheriger Anmeldung zur Verfügung.

Molecular chirality at surfaces: 2D crystallization and manipulation of single adsorbates with inelastic electron tunneling.

Prof. Karl-Heinz Ernst

Empa – Swiss Federal Laboratories for Materials Testing and Research,
Dübendorf
Switzerland

Crystallization of organic compounds is one of the most important means in chemical and pharmaceutical industry to obtain products. However, not much is understood about important phenomena like polymorphism and optical resolution, i.e., separation of chiral compounds into their left- and right-handed forms. A promising approach is studying two-dimensional (2D) crystallization phenomena on well-defined substrates with scanning tunneling microscopy (STM) and other surface sensitive techniques. The interplay of handedness in chiral monolayers shows new cooperative effects like amplification of chirality or suppression of long-range order by chiral impurities.

Inelastic electron tunneling through single molecules in the tunnel junction of an STM allows to study molecular surface dynamics. Different adsorbated modes like hopping, rotation and dissociation can be studied. We show that the handedness of a single chiral adsorbate can be inverted as well.

Contact: Dr. Christian A. Bobisch, Faculty of Physics
Phone: +49-(203)-379- 2596 / Mail: christian.bobisch@uni-due.de