
O 16: Invited Talk (Jörg Kröger)

Time: Tuesday 9:30–10:15

Location: HSZ 02

Invited Talk

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Electron Transport through Single Atoms and Molecules: an STM's View — ●JÖRG KRÖGER — Christian-Albrechts-Universität zu Kiel, D-24098 Kiel, Germany

Two electron transport regimes will be considered. One regime is characterised by electrons tunnelling through a vacuum barrier with currents of the order of 1 nA. Engineering of a molecular switch on surfaces and vibrational spectroscopy of a single atom serve as examples for state-of-the-art experiments performed in the tunnelling regime.

In the other transport regime currents in the microampère range are used. At these elevated currents a single-atom or single-molecule contact is formed with the tip of the microscope and electrons are transported ballistically through the junction. Contact spectroscopy of single atoms, the quantized conductance of magnetic atoms, and the dependence of single-molecule conductance on the molecule orientation between the contacting electrodes are highlights of this rather unconventional use of a scanning tunnelling microscope. Financial support by the DFG through SFB 668 and SFB 677 is acknowledged.