

EINLADUNG

zum Vortrag
von

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Every atom counts: Controlling chemical processes in single molecules on surface

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1040 Wien, Wiedner Hauptstraße 8-10

Abstract:

A fundamental understanding of functional molecules and their assembly into pre-defined architectures are key challenges in nanotechnology and of interest in various fields from molecular electronics over novel materials to molecular machines. We study chemical processes of single functional molecules on surfaces by scanning tunneling microscopy under ultrahigh vacuum conditions and at low temperatures, thus allowing submolecular resolution analysis.

Various examples of how to control chemical processes will be discussed, ranging from covalent molecular linking to intramolecular reactions. The first is realized in on-surface polymerization processes where molecular building blocks are connected to two-dimensional networks or one-dimensional chains, which can act as molecular wires. On the other hand, chemical processes within individual molecular can be controlled via their environment. This is demonstrated for molecular switching reactions that can be tuned up and down by their adsorption site or even single atoms in the vicinity of the molecule.

FWF SFB F45 „Functional Oxide Surfaces and Interfaces (FOXSI)“

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