

Highly ordered molecular adsorbate layers on metal surfaces: Model systems for organic electronics

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Abstract :

Organic and molecular electronics are key technologies for the future of information processing. There are two reasons for this: While organic electronics with conventional device concepts facilitates “cheap electronics everywhere”, its sister technology, molecular electronics, offers excellent prospects for the nanoelectronic high-performance devices of the future.

Because they allow the deployment of powerful surface science tools, *highly ordered* monolayers of organic semiconductors on single crystal surfaces are good model systems for the interfaces which bestow functionality to organic and molecular devices. In the present talk, we focus on the chemical bonding and the evolution of structures at well-defined metal/organic interfaces. We also show that highly ordered molecular adsorbate layers are an excellent starting point for studying electrical transport in (gated) molecular wires. Finally, we discuss novel imaging schemes based transport through junctions.