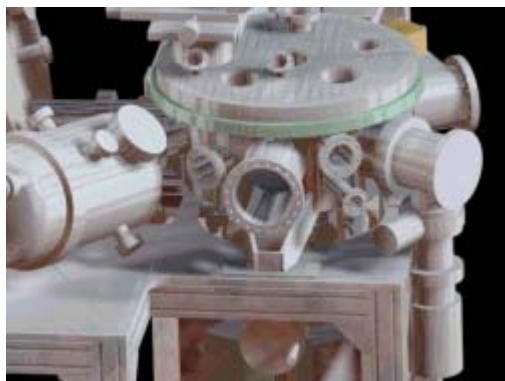


Surface Structure and Reactivity Group



The group activity is focused on determining the **structure of transition metal surfaces in the presence of adsorbates and coadsorbates**, with respect to their chemical reactivity. We are interested in how adsorbates interact on a surface, how they modify the substrate, how the substrate structure influences reactivity and what the elementary steps in simple catalytic reactions are. To this purpose, we use a LEED/XPS apparatus for structural determination by diffraction techniques and a Variable Temperature Scanning Tunneling Microscope for direct imaging of the surfaces at an atomic scale. Further experiments are periodically performed at the Elettra beamlines, in particular at the SuperESCA.

The experiments are often complemented by DFT calculations of external groups.

Recently, the main interest has been the study of the **interaction of oxygen with Rh surfaces** and its reaction with **hydrogen and CO**. In order to get better insight into the dynamics of surface processes, constant efforts are dedicated to the development of the experimental facilities. Present ongoing projects are the increase of the STM time resolution in the tens of milliseconds regime and the integration of a supersonic molecular beam in the SuperESCA system.

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