



Im Rahmen des Physikkolloquiums spricht

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über

Metastable Induced Electron Spectroscopy

Abstract:

Surface analytical tools are of increasing importance for the investigation and the development of new materials. This is in particular for example due to the downsizing of the materials or the increasing significance of heterogeneous catalytic processes. A considerable and increasing number of surface analytical techniques is applied in investigation and development of new materials. These are mainly spectroscopic techniques analyzing for example chemical surface compositions and surface electronic states as well as microscopic techniques giving for example information of surface topography and local surface electronic states.

Metastable Induced Electron Spectroscopy (MIES) is a seldom used technique and is available only in a handful of labs in central Europe, USA and Japan. Nevertheless, MIES is the most surface sensitive spectroscopic technique at all, but the interpretation of MIES spectra is often ambitious and not straightforward.

MIES gives information about the most protruding surface wave functions which completely determine the heterogeneous reactions between surfaces and impinging gas molecules from the ambient atmosphere.

In this talk a number of examples for the application of MIES will be given for the interaction of gas molecules with earth alkali surfaces, island formation on SrTiO_3 , the orientation of single acid molecules on metal surfaces, the solvation of CsI salt in amorphous solid water and the cleaning and selective oxidation of Ge.