

## Grazing-incidence small-angle x-ray scattering(GISAXS)

### Abstract:

Grazing-incidence small-angle x-ray scattering (GISAXS) is a multifaceted tool for characterizing micro- and nano-scale density correlations and shape analysis of objects at surfaces or at buried interfaces for various classes of materials such as metals, semiconductors, polymers, biopolymers and soft matter.

GISAXS provides an excellent complement to imaging probes such as atomic force microscopy (AFM) and transmission electron microscopy (TEM). It is an advanced scattering technique, which yields results in reciprocal space. Due to the high demand on collimation, GISAXS experiments are primarily based on synchrotron radiation in combination with two-dimensional detectors.

This technique gives averaged statistical significant information over all the illuminated sample area in any kind of environment ranging from ultra-high vacuum to gas atmospheres or liquids.

This talk includes the theoretical part and some application examples such as kinetic studies performed as function of external parameters, e.g. as temperature or pH-value. The advantages of GISAXS are real-time measurements, called in-situ measurements. In order to obtain a detailed understanding of the experimental data, we will simulate them using the software IsGISAXS.

### Literature:

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