Sub-microbeam GI-SAXS: a new technique for the detection of local structures in thin polymer films

Peter Müller-Buschbaum
Physik Department, TU München

While on a local scale the surface structure is nicely pictured by AFM, scattering is usually applied to obtain a mean statistical information. With grazing incidence small-angle x-ray scattering (GISAXS) a length regime comparable to AFM is addressed. Local scattering information becomes accessible by combining GISAXS with a sub-micron sized x-ray beam and scanning of the sample relative to the beam. We demonstrate the actual possibilities of this technique by locally probing polymeric structures with a beam diameter of 0.9 micrometer. The experiments were performed at the ID13 beamline.