

**Physikalisch-Chemisches Kolloquium am Freitag, den 15.01.2016, 10:15 (AR-F002)**

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***„AFM-Based Infrared Nanospectroscopy and Imaging of Polymeric Materials“***

Atomic force microscope-based infrared spectroscopy (AFM-IR) has been developed in recent years providing extremely high spatial resolution chemical characterization and imaging. The technique is based on the combination of a tunable infrared laser with an atomic force microscope that can locally map and measure thermal expansion of nanoscale regions of a sample resulting from the absorption of infrared radiation. Because the AFM probe tip can map the thermal expansion on very fine length scales, the AFM-IR technique provides a robust way to obtain interpretable IR absorption spectra at spatial resolution scales well below the diffraction limit. Several applications of AFM-IR spectroscopy and imaging to polymeric materials will be presented, including the chemical identification of components in multilayer films, polymer defect analysis, and chemical characterization electrospun nanofibers of a poly(hydroxybutyrate) (PHB) copolymer.