

Morphology of Polymer-Metal Interfaces

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Within recent years, metalized polymer films have attracted increasing interest due to their possible applications in organic electronic devices. In these devices, a thin metal layer is used as an electric contact in conjunction with an active layer comprising a semiconducting polymer. Since, the electronic properties of such contacts are influenced by the interface between the metal and the polymer, a precise control of the metal growth on top of the organic material is required.

In the presented work, we investigate the growth kinetics of aluminum on top of poly(3-hexylthiophene) (P3HT) by in-situ grazing incidence small angle x-ray scattering (GISAXS) for different molecular weights of the polymer. Hereby, the growth process is monitored in real-time and temporal information on structural parameters of the deposited material can be extracted. We complement the study with different imaging, optical and electronic characterization methods.

Primary author: Mr MÜLLER, Kai (Technische Universität München)

Co-author: Prof. MÜLLER-BUSCHBAUM, Peter (TU München, Physik-Department, LS Funktionelle Materialien)

Presenter: Mr MÜLLER, Kai (Technische Universität München)

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