



Polymers under Multiple Constraints

# Polymer- & Soft-Matter-Seminar

**Tuesday,  
27<sup>th</sup> October  
2015**

**at: 5.15pm**

**VDP4 1.27,  
Von-  
Danckelmann-  
Platz 4,  
06120 Halle**

## Dr. Ilja Gunkel

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### **“In situ grazing-incidence small-angle X-ray scattering studies of block copolymer films during solvent vapor annealing ”**

The self-assembly of block copolymers is a powerful approach toward the fabrication of templates and scaffolds for nanostructured morphologies. Block copolymers in thin films are useful, for example, for the generation of masks for lithography applications. Generally, block copolymer thin films require annealing processes to produce nanostructured assemblies with the desired degree of lateral ordering and orientation of the polymer domains. Recently, solvent vapor annealing has emerged as an effective means for controlling and manipulating the self-assembly of block copolymers in thin films. While solvent vapor annealing appears to be more effective than thermal annealing in producing films with long-range lateral order of BCP domains, a comprehensive understanding of BCP self-assembly during solvent vapor annealing has yet to be achieved. In this talk I will show that detailed structural information of BCP films in the swollen state, or as solvent is removed can be obtained by means of in situ grazing-incidence small-angle X-ray scattering (GISAXS).