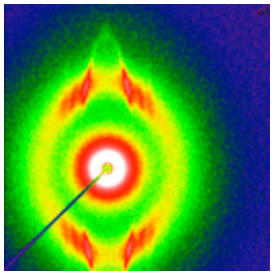

Contribution ID: **15** Type: **not specified**

Contr. Talk 8 - Shear Effects on Soft Colloids

Tuesday 11 December 2018 11:30 (20 minutes)

Whereas the collective response to external shear of soft colloids is frequently investigated [1,2], observations of shear-induced effects on the single particle level are still scarce. Therefore we investigated this intraparticle "brush deformation"of polybutadiene (PB) star and linear polymers by rheology and Rheo-SANS [3, 4]. Excellent agreement between experiment and theory with respect to the amount of shear deformation and shear thinning for star polymers with varying functionality, f, was found. Surprisingly, two decay modes ("fast"and "slow"modes) were observed in flow curves of star polymers, indicating a hierarchical deformation of the polymeric corona. In binary mixtures it was observed that fast and slow modes originating from the star polymers were strongly affected by the addition of linear homopolymer, which influenced the shear induced 'brush deformation'of star polymers. We found macroscopic phase separation upon increasing concentrations of linear polymer and shear-induced microphase separation (coil-to-globule transition) by means of Rheo-SANS experiments.

Presenter: STELLBRINK, Jorg (JCNS-1, Forschungszentrum Julich, 52425 Julich, Germany)

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