Contribution ID: **36** Type: **Poster**

Dynamics and structure of PNIPAM-based microgels with different internal homogeneity

Monday, 17 September 2018 17:45 (15 minutes)

Due to the reversible temperature induced volume phase transition (VPT), PNIPAM microgels serve as model systems for basic research. Moreover, the variation of the chemical composition tunes the functionality and responsivity. Changing the monomer feeding process influences homogeneity of the polymer particles and changes structure and dynamics of such systems. The classical particles preparation by means of precipitation polymerization leads to a core-shell structure of polymer particles, whereas continuous monomer feeding process leads to a more homogeneous structure.
In this contribution we present neutron spin-echo (NSE) and small-angle neutron scattering (SANS) experiments of inhomogeneously and homogeneously cross-linked networks of same chemical composition of PNIPAM-based microgels. Frozen inhomogeneities and density fluctuations have been observed in addition to Zimm like segmental polymer dynamics depending on the homogeneity of the particle and the cross-link density. Details of the internal microgel structure and its dependence on different synthesis parameters have been obtained in this way.

Primary authors: Ms KYREY, Tetyana (TU Berlin, JCNS at MLZ); WITTE, Judith (TU Berlin); Prof. VON KLITZING, Regine (TU Darmstadt); Dr WELLERT, Stefan (TU Berlin); Dr HOLDERER, Olaf

Presenter: Ms KYREY, Tetyana (TU Berlin, JCNS at MLZ)

Session Classification: Poster session 1

Track Classification: P2 Soft matter