Contribution ID: **201** Type: **poster**

Transient formation of bcc crystals in suspensions of pNIPAM-based microgels

Wednesday, 18 September 2013 12:15 (2 hours)

We present a small angle X-ray scattering study of crystals formed by temperature-sensitive, swollen microgel particles consisting of poly(N-isopropylacrylamide) co-polymerized with acrylic acid and 5 mol% of cross-linker. As for hard spheres, the random hexagonal close packed structure is predominant during crystal growth and slowly transforms towards the face-centered cubic structure. However, a transient phase of body-centered cubic crystal is observed in an intermediate range of effective volume fractions. We estimate that the studied suspensions are close to a transition from fcc to bcc structure that can be understood by the tendency of the system to maximize excluded volume and minimize the contact area between the particles.

Primary author: Dr GASSER, Urs Gasser (Laboratory for Neutron Scattering, Paul Scherrer Institut)

Co-authors: Prof. FERNANDEZ-NIEVES, Alberto (Georgia Institute of Technology); Mr SCOTTI, Andrea (Paul Scherrer Institut); MENZEL, Andreas (Paul Scherrer Institut); Dr LIETOR-SANTOS, Juan-Jose (Georgia Institute of Technology); Dr BUNK, Oliver (Paul Scherrer Institut)

Presenter: Dr GASSER, Urs Gasser (Laboratory for Neutron Scattering, Paul Scherrer Institut)

Session Classification: Poster session I and lunch