



Contribution ID: 14

Type: Poster

Orientalional ordering and assembly of silica-nickel Janus particles in a magnetic field.

The orientation ordering and assembly behavior of silica-nickel Janus particles (JPs) in an external magnetic field (\vec{H}) were probed by ultra small-angle X-ray scattering (USAXS). Even in a weak applied field, the net magnetic moments of individual particles aligned in the direction of the field as indicated by the anisotropy in the recorded USAXS patterns[1]. At higher fields, the magnetic forces led to chain-like configurations of particles as indicated by an additional feature in the USAXS pattern. A theoretical framework is provided for the quantitative interpretation of the observed anisotropic scattering diagrams and the corresponding degree of orientation. No anisotropy was detected when the magnetic field was applied along the beam direction, which is also replicated by the model.

Please select the related topic from the list below

Magnetic thin films and interfaces

Primary authors: MANNA, Gouranga (ESRF); Dr SHARPNACK, Lewis (University of California); NARAYANAN, Theyencheri (ESRF); Dr ZINN, Thomas (Diamond Light Source)

Presenter: MANNA, Gouranga (ESRF)

Session Classification: Poster session