

Seminar

Understanding how local charge correlations drive phase behavior and self assembly of Polymer Coacervates

Mithun Radhakrishna

Indian Institute of Technology, Gandhinagar

When oppositely charged polyelectrolytes are mixed at suitable conditions of pH, temperature and ionic strength, they phase separate into a polymer rich (coacervate phase) and a polymer lean supernatant phase. This associative liquid-liquid phase separation is called Polymer Coacervation. Polymer coacervates have been widely used as microencapsulants in food industry, drug delivery vehicles, underwater adhesives and sensors. Existing theories like Voorn-Overbeek and their counterparts do not capture the effect these local correlations that occur at shorter length scales than considered in mean field approach. In the current study, we use Monte Carlo simulations to understand how these local correlations are influenced by chain connectivity, excluded volume, charge patterning and chain stiffness and the effect of these correlations on the phase behavior and self assembly of polymer coacervates.

Thursday, May 4th 2017

4:00 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS