

Seminar

Self-assembly at nanoscale: polyhedral colloids and block-copolymers

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The study of self-assembly at nanoscale is useful not only for its potential materials applications, but also as a tool for studying fundamental problems in phase transitions. In this talk, I'll describe our work on self-assembly of soft materials with two specific cases of building blocks.

First case would be that of polyhedral colloidal nanoparticles, wherein we demonstrate through Monte Carlo simulations, that stable and controllable ordered multicomponent structures could be obtained with the help of entropic and enthalpic “patches”.

In the second example, I'll talk about controlling ordered microphases formed by block-copolymers due to competition between chain stretching and interfacial energy. By combining an inverse design method with field theoretic simulations of polymers, we can better navigate the huge design parameter space in order to target a given morphology or a property.

Tuesday, Nov 22nd 2016

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

Seminar Hall, TCIS