

ICTS Seminar

- Title : Curvature remodelling of cell membranes and its implications in Cellular biophysics
- Speaker : Ramakrishnan Natesan, University of Pennsylvania, USA
- Date : Monday, March 27, 2017
- Time : 11:30 AM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : A biological cell is a complex soft matter system in which the various physical and chemical processes span multiple spatial and temporal scales. The various theoretical and computational tools developed in the context of soft matter physics may be utilized to build highly quantitative models for these processes. In this talk, I will present a multiscale theoretical/computational perspective of cell membranes and show how such quantitative models may provide a powerful alternative to study and quantify biophysical phenomena at the mesoscale. I will use the problem of protein induced remodelling of cell membranes to demonstrate how membrane curvature is induced at multiple length scales and what are its implications on the process of nanocarrier/viral adhesion? I will also show how the various configurational entropies play a major role in determining the binding affinity of nano-sized particles.