

Seminar

Entropic transport of macromolecules

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Flexible macromolecules, like polymer chains in thermal equilibrium, are subjected to considerable conformational fluctuations in solution. When the motion of such macromolecules is constrained by a spatial confinement, it confronts a physical barrier which results in reduction in its conformational degrees of freedom, giving rise to an entropic barrier. How an externally imposed signal couples to the various conformations of the polymer chain and the associated thermal noise as the chain undergoes translocation across the entropic barrier is of increasing interest in view of potential implications in macromolecular transport in biological contexts. We explore the transport of macromolecules over such entropic barrier in presence of an externally imposed oscillatory force in time and describe the emergence of different noise-induced phenomena like stochastic resonance and ratchet rectification.

Tuesday, Oct 25th 2016

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

Seminar Hall, TCIS