



**TIFR Centre for Interdisciplinary Sciences,
Narsingi, Hyderabad 500075**

Seminar

**Nanopore Biophysics: From Gene Sequencing to Gene
Silencing**

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Abstract: Structure-Function relationship is ubiquitous in almost all of the nature's self-assembled systems. I will introduce nanopore biophysics and its biosensing capabilities for studying structural heterogeneities in biological systems. Spanning applications from technology to biology, I will first present my work on developing nanopore-based novel DNA sequencing technology. In the second part of my talk, I will show first ever application of solid-state nanopores in screening structural states of nucleosomes and chromatin. Finally, I will present my research proposal to develop a concerted biophysical, chemical and nanoscience based approach to study kinetics of architectural proteins-driven chromatin compaction by coupling nanopore biosensing to optical tweezers based force spectroscopy. The outcome of my proposed research will shed light on primary mechanism of chromatin folding and the role of chromatin architecture based gene-silencing in disease, DNA repair, aging and cancer.

Date: Thursday, July 18th 2013

Time: 11:30AM (Tea/Coffee at 11:15AM)

Venue: Conference Hall, TCIS

All are cordially invited