Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Impact of Ions on Biomolecular Condensation: Solvation Perspective

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Ions play a pivotal role in determining the stability of colloids, especially if the surface of the colloids is charged. Historically protein precipitation by ions has been systematically studied and ions have been classified in the form of Hofmeister series. However, the list is not extensive as several complex ions have been observed to offer unexpected (de)stabilisation and condensation of proteins. The process of biomolecular condensation has mostly been understood from the protein's perspective whereas the pivotal role of water as a matrix of the cellular environment has been shunned. Our group has been using THz spectroscopic technique to determine the role of water in various biophysical processes including biomolecular condensation. THz spectroscopy (1 THz = 10^{12} Hz) is a non-conventional but highly potential tool to determine the network structure of water at biomolecular interfaces. In this talk, I will discuss the effect of a few ions on biomolecular condensation and a possible explanation of their various anomalous behaviours in the light of their solvation.

Friday, Jun 27th 2025

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFRH