Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Colloquium

Electrochemistry of Atomic Layers: Fundamentals to Applications

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Many advanced materials prepared exclusively using Molecular Nanotechnology have attracted much attention recently due to the possibility of tailoring their dimensionality to facilitate a change in their fundamental properties including mechanical, electrical, optical or electrochemical behavior in comparison with similar behavior of their bulk analogues. In this lecture, I will focus on the generic aspects of reducing dimensionality by the application of electric field by taking many examples like Graphite, Carbon nanotubes, Molybdenum sulphide, Tungsten disulphide and black Phosphorous. Electrochemical aspects of elemental as well as transition metal dichalcogenides as layered materials for transformation to quantum dots and their size tuning will be discussed along with the role of ionic strength, temperature, counter ions, solvent etc. with some of the potential applications like single electron transistors, sensors, energy storage, electrocatalysts and optoelectronic devices.

Saturday, Aug 25th 2018

11:30 AM (Tea/Coffee at 11:00 AM)

Auditorium, TIFR-H