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

Seminar

The structure of vapour-deposited glasses: Use of surface dynamics to achieve desired molecular packing

Kushal Bagchi

University of Chicago, IL

Over the last decade, glasses prepared from physical vapour deposition (PVD) have drawn significant interest in the fields of material science and condensed matter physics. In addition to being of interest to the multibillion-dollar organic LED industry, glasses prepared through PVD serve as model systems for a deeper understanding of glassy states of matter. In this talk, we discuss experimental exploration of the structure of PVD glasses; an understanding of molecular packing in PVD glasses is essential for developing structure-property and structure-dynamics relationships in these materials. We demonstrate that the surface equilibration mechanism successfully predicts the structure of PVD glasses both in the bulk and in confined environments. Our experimental results suggest that simulations of liquid surfaces could be a powerful tool for the computational design of PVD glasses.

Monday, May 1st 2023

04:00 PM (Tea / Coffee 03.45 PM)

Auditorium, TIFR-H