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

Seminar

Elastocapillary phenomena with thin films

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I will present our work on a new class of surfactant based on thin elastic sheets that can wrap liquid drops in a spontaneous process driven by capillary forces. I will show a method where we can exploit the fast dynamics of droplet impact to achieve wrapping of oil droplets by ultrathin polymer films in a water phase or vice versa. The process yields wrappings that are optimally shaped to maximize the enclosed fluid volume and have near-perfect seams. We can achieve wrappings of targeted three-dimensional (3D) shapes by tailoring the 2D boundary of the films. I will further address the related fundamental question about the nature of capillary forces acting on thin films adsorbed to a liquid surface, more specifically the role that solid surface energies play in determining the surface stresses.

Tuesday, Aug 14th 2018

4:00 PM (Tea/Coffee at 3:30 PM)

Seminar Hall, TIFR-H