



ICTS Fluid Dynamics Seminar

Title : Impact Phenomena in liquid interfacial systems across spatiotemporal scales

Speaker : Durbar Roy (Indian Institute of Science, Bengaluru)

Date : Friday, 02nd February, 2024

Time : 02:30 PM (IST)

Abstract : In this seminar, I will discuss our research exploring impact phenomena across various spatiotemporal scales in liquid interfacial systems ranging from medical diagnostics to drop impacts on solids and immiscible liquids using high-fidelity experiments and theoretical modeling. We show that noninvasive ocular diagnostics demonstrate a propensity for droplet generation and present a potential pathway for pathogen transmission. For drop impact problems, we study impacts on solids, bio-inspired substrates, and immiscible liquid pools at low to moderate impact energies. Using high-speed reflection interferometry and linear stability analysis, we explore the air layer dynamics beneath an impacting drop on solid (isothermal and heated) substrates and immiscible liquid pools. During impact on immiscible liquids, we also investigate the air craters formed on the surface of the impacting droplet and attribute its formation to the rapid deceleration of the droplet due to viscous drag force. We represent the penetrating drop as a constrained Rayleigh drop problem with a dynamic contact line.

Venue : Offline: Feynman Lecture Hall

Online: Please click on the below link to join the colloquium

<https://icts-res-in.zoom.us/j/94341147751?pwd=TzdZbVd3SURyOU93a2NmZTcwSjAwUT09>

Meeting ID: 943 4114 7751

Passcode: 020203