



International Conference on Micro Nano Fluidics (ICOM 2025)



October 31 – November 2, 2025, IIT Guwahati

Speaker/affiliation: Prof. Ashis Kumar Sen, IIT Madras, India.

Tentative topic of the invited talk

Particles and fluid interfaces exposed to ultrasound

Abstract of the invited talk

When particles and fluid interfaces are exposed to ultrasound, they experience a range of dynamic phenomena driven by acoustic forces. Ultrasound waves generate pressure fields that can induce particle motion through mechanisms such as acoustic radiation forces and acoustic streaming. These effects can cause particles to migrate, align, or form patterns at fluid interfaces. Additionally, the interaction of ultrasound with fluid interfaces can lead to localized deformation, enhanced mixing, or droplet manipulation, depending on the frequency and intensity of the acoustic waves. Such phenomena are central to applications in acoustofluidics, including particle sorting, droplet generation, and non-contact manipulation in microfluidic systems.