

## **Seminar**

### **Secretive Behaviour of Binary Mixtures: Layers, Drops and Particles**

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Everyone has a secret and will do whatever to hold on tight to it! Evaporating drops or pools of binary liquid mixtures or particles are no different – in fact, their secrets are tightly wrapped under their complex mixture physics and thermodynamics that manifest as a myriad of instabilities that they demonstrate. In this talk – I will present some of our latest work on layers (pools), droplets and immersed solids. Our layers work revealed the presence of two classes of instabilities depending upon surface tension ratios and composition. We also show how spreading in droplets is enhanced because of mixtures. Finally, with or without temperature gradients in a fluid, immersed solids demonstrate orbits that exhibit a mesmerizing intricacy rich in dynamics. We have demonstrated all of the above, by means of direct numerical simulations, stability analysis, and experiments. While our triple-pronged approach has revealed some fascinating physics, these systems are pretty stubborn and more needs to be done!

***Friday, Aug 9<sup>th</sup> 2019***

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

***Auditorium, TIFR-H***