

## **Colloquium**

### **Watching Molecules and Particles in Real Time**

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Soft matter constitutes a large class of materials ranging from milk and paints to biopolymers and living cells. Often, elucidating the properties of materials demands direct real-space visualization of microscopic organization and dynamics of their components. The first part of my talk will focus on experiments where direct imaging of dense colloidal suspensions has provided insights into numerous generic condensed matter phenomena in glasses and crystals. Owing to the advantages of real-space imaging, there are efforts to develop techniques to study dynamics of materials with sizes in the nanometer regime. In the second part of the talk, I will discuss the protocols we have devised to perform liquid-phase transmission electron microscopy (TEM) and demonstrate direct visualization of soft materials like polymers with single molecule resolution. Together, such studies demonstrate how new experimental methods can lend insights into important phenomena observed in materials.

***Monday, Dec 4<sup>th</sup> 2017***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Auditorium, TIFR-H***