

Seminar

Rheology of Soft Matter Systems from Glasses to Living Tissue

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We often face challenges in discovering relationships between dynamics, force, and structure of non-equilibrium disordered systems like glasses and living active matter systems. First, I will explain how rotational Fluorescence Correlation Microscopy (r-FCM) is used in situ to probe the local structure of a deforming disordered material. Then, I will describe an example, tracking in situ the structural transition in a polymer glass (PMMA) during tensile deformation. Subsequently, I will introduce our experimental approach to probe and correlate structure, dynamics, and forces in a living tissue monolayer using traction force microscopy (TFM) and boundary stress microscopy (BSM) in 2D. Then, I will show how dynamics and force fields control the energy flow in living active systems that can result in the formation and movement of topological defect patterns.

Tuesday, May 20th 2025

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFRH