Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally Mandal, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Visualizing ultrafast atomic and electronic dynamics in ferroelectrics with Ultrafast Electron Diffraction

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Atoms and electrons are the two fundamental constituents of all matter, and their motion defines the functionality of modern materials. However, these motions are so small and so fast that observation is extremely challenging. In Ultrafast Electron Diffraction (UED), we combine the atomic spatial resolution of an electron microscope with the femtosecond temporal resolution of ultrashort laser technology to visualize such dynamics. In this talk, I will discuss the capabilities of UED, through my recent studies on ferroelectric materials, where we directly visualize ultrafast atomic dynamics, photoexcited carrier separation, and disentangle the underlying energy relaxation mechanisms.

Tuesday, Jun 23rd 2026

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

Seminar Hall, TIFRH