

MONDAY

# COLLOQUIUM

## Seeing surfaces with atoms and 'seeing' atomistic details of surface chemistry

Pranav R Shirhatti (TIFR, Hyderabad)

23 Mar 2026 (Monday) | 16:00 Hrs (Tea / Coffee 15:45 Hrs) | Venue: TIFRH Auditorium

Interaction of atoms/molecules with surfaces forms the foundation of several important areas ranging from heterogeneous catalytic chemistry to adhesion. In this talk I will describe our studies to understand and utilize such interactions by means of molecular beam surface scattering method. Here two examples will be showcased (1) Understanding the elementary steps in chemical reactions on surfaces and (2) Development of Atom scattering based microscopy. Finally, I will also describe our efforts towards measuring quantum state specific chemical reaction probabilities and studying collisional energy transfer on surfaces. These studies are anticipated to give insights into understanding of far from equilibrium processes in surface chemistry, and the high degree of control over the initial conditions allows to build rigorous benchmarks for theoretical models, aiding in the development of predictive models for surface chemistry.



TATA INSTITUTE OF  
FUNDAMENTAL RESEARCH