

Tata Institute for Fundamental Research

Partner contact person: E. Krishnakumar

Profile: The Tata Institutes for Fundamental Research (TIFR) are some of India's largest (and oldest) centres of Research Excellence conducting basic research in physics, chemistry, biology, mathematics and computer science with campuses in Mumbai, Pune and Bangalore and research facilities. TIFR Mumbai is recognised as a leader of international research in the A&M sciences with research in atomic, molecular and optical sciences receiving major investment to create state of the art facilities recent few years. Hosting a heavy-ion accelerator known as the "Pelletron" high energy (MeV), highly charged ion beams are used as a probe to investigate the mechanisms of atomic collisions with molecules, clusters and solids. collective whilst highly charged ions prepared using an ECR source are used to probe interdisciplinary fields at low energies (keV). A suite of ultrashort (femtosecond) lasers producing very high peak powers are being used to explosively ionize matter and study its behaviour under these extreme, "implosive" excitation conditions. TIFT Mumbai has also been the centre for the study of fundamental electron molecular interactions with an international reputation for developing novel instrumentations. Research into the role of atomic and molecular interactions in both natural and technological applications has led to TIFR being a founder member of the Asia Pacific Atomic data Network (APAN) with Korea, Japan and Australia.

Role of TIFR in Project: TIFR will therefore coordinate SUP@VAMDC programme within the Indian Subcontinent including eMOLIND the electron molecule database project (with Sardar Patel University, Gujarat) and the VUV ice spectra database for astronomical ices. TIFR will also coordinate links with BARC which leads India's main spectroscopic research community (including users of the Indian Synchrotron facility at Indore). TIFR will be responsible for the dissemination of SUP@VAMDC within the Indian subcontinent and engage A&M data users and providers through the organisation of regional meetings organised by the Indian Society for Atomic and Molecular Physics (ISAMP) such as the biannual International Conference on "Current Developments in Atomic, Molecular, Optical & Nano Physics with Applications".

Key persons:

E. Krishnakumar, Professor

Expertise: Study of electron-molecule interactions; Dissociative electron attachment, apparatusal of electron atom/molecule data. Lead Indian Member of the Asia Pacific Atomic data Network (APAN).

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