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

Seminar

Tuning the electrochemical interfaces for boosted catalytic activity: examples of CO_2 conversion and H_2 generation

Pravin P Ingole

IIT Delhi

Today, the energy crisis due to the depleting fossil fuel supply and its negative impact on the environment, like global warming, is probably the world's biggest problem. Efforts have been made to develop abundant, inexpensive, and environmentally friendly renewable energy resources, like water splitting using solar light, as well as to mitigate the exponentially increasing global CO_2 atmospheric concentration for carbon-neutral energy sources. However, to develop highly efficient electrocatalysis systems, the judicious tuning of electrochemical interfaces via strategies such as electronic effects, chemical functionalities, and type and distribution of active sites is essential. In this regard, the catalyst development based on the Sabatier principle provides a promising approach. In this talk, I shall discuss a few recent results from our research group at IIT Delhi, India, towards green energy and clean environmental-related applications. Particularly, I shall focus on H_2 generation and integrated CO_2 capture and conversion.

Monday, May 11th 2026

14:30 Hrs (Tea / Coffee 14:15 Hrs)

Auditorium, TIFRH