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

Seminar

From Metal Porphyrin to Engineered Biocatalysis: A Journey Through Molecular Transformation

Satyajit Roy

UT Dallas, TX

My doctoral research focused on metalloporphyrin-catalysed carbene and nitrene chemistry, with an emphasis on mechanistic investigations and catalyst design, leading to efficient denitrogenative annulation of tetrazoles and triazoles for N-heterocycle synthesis. In my postdoctoral work, I transitioned to biocatalysis, employing enzymatic systems to perform "new-to-nature" carbene and nitrene transfer reactions. Asymmetric synthesis, a cornerstone in the pharmaceutical industry, is vital for producing single enantiomers with enhanced efficacy and safety. While traditional asymmetric chemo-catalysis remains efficient, biocatalysis has emerged as a powerful and sustainable alternative, offering exceptional selectivity, mild operating conditions, and environmental compatibility.

Monday, Aug 25th 2025

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

Auditorium, TIFRH