

## Tata Institute of Fundamental Research

Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500 046

## Seminar

## Pyrrolinium Cations-Derived Electron Rich Compounds: Synthesis of Closed- and Open-Shell Compounds

## Mithilesh Kumar Nayak

TCIS, Hyderabad

Electron-rich alkenes are an important class of compounds due to their remarkable redox properties and applications in various fields. In this category, tetrathiafulvalene (TTF) is one of the most celebrated examples and exhibits three redox states: neutral, radical-cation, and dication. As a result, TTF derivatives have been found applications in various fields such as electrically conducting materials, charge transfer complexes, electron donor, and electronic devices. Here I will present my findings on the syntheses and redox (electrochemically as well as chemically) behaviours of amino-substituted electron-rich alkenes  $\bf I$ ,  $\bf II$  and  $\bf III$ . I will also present the synthesis of airstable 2,2'-bipyrrolidines  $\bf IV$  in which a  $\bf C(sp^3)$ - $\bf C(sp^3)$  single bond is an eventual source of two-electrons. At the end, I will discuss the synthesis and reactivity of bis-CAACs  $\bf V$ .

Monday, Nov 14<sup>th</sup> 2022 9:00 AM (Tea/Coffee at 8:45 AM) Auditorium, TIFR-H