

## **Seminar**

### **Organic Radicals to Molecular and Supramolecular Materials**

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In this talk, I will primarily discuss our group's research work that has been accomplished in JNU. From our initial findings of transformation of electron-deficient molecules into colourful organic radical ions and their applications in sensing/logic operations, I will present our recent work on the various aspects of design, stabilisation and isolation of these colourful radical ions under ambient conditions. Interestingly, their (radical ion) precursors form the strongest electron acceptors reported till date with LUMO reaching up to -5.1 eV. On similar lines, we extended our design aspects to synthesize new multi-electron acceptors and multi-electron donors.

In addition, our investigation on switching the redox-states of the radical ions and isolation of these states will be a discussion point of this talk. I will deliberate on how doubly-zwitterionic, highly electron-rich molecular systems can be formed and their interesting aromatic/antiaromatic properties.

While research on synthetic spin-chemistry remains our mainstay, we have also worked on organic supramolecular materials, *viz.* semiconductors, ferroelectrics, piezoelectric etc. I will end the discussion with our recent work on the design and synthetic facets of new macrocycles that can be used as multi-electron accumulator/proton conductive system and for singlet fission applications.

***Wednesday, May 17<sup>th</sup> 2023***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Auditorium, TIFR-H***