Tata Institute of Fundamental Research
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Internal Seminar

Molecular Lanthanide Complexes as Single-Molecule Magnets

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Single-Molecule Magnets (SMMs) are metal-organic compounds that show slow magnetic relaxation and magnetic hysteresis below the blocking temperature, T_B. Such molecules are of considerable interest owing to their potential demand in many futuristic technological applications. In the recent years, lanthaniods have emerged as potential candidates for observing SMM behaviour at Liquid Nitrogen temperature. Although considerable efforts have been devoted to understanding the magneto-structural correlations in this family, there are still many challenges associated with it. Among these, for the synthetic chemists, the challenges lie in fine tuning and achieving desired magnetic behavior from ligand design and subsequent control of the nuclearity and the topology of the complexes.

In this talk, I am going to present the various types of ligands that we have designed for the syntheses of homometallic mononuclear and polynuclear lanthanide (4f) complexes. The syntheses, structural characterization, and magnetic studies of these complexes will be discussed briefly.

Thursday, Aug 1st 2019

11:30 AM (Tea/Coffee at 11:00 AM)

Seminar Hall, TIFR-H