

Seminar

Molecular Engineering of Helically Chiral Functional Molecules: Materials for Next Generation (Opto) electronics

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In the era of miniaturisation-aiming to build ever smaller and more efficient optical, electronic, and mechanical devices there is an increasing demand for multifunctional materials, which can respond to multiple external stimuli simultaneously. To address this challenge, we aim to explore ways to custom-build multifunctional molecules by taking advantage of chirality a property of molecules related to their symmetry. The introduction of chirality in π -conjugated organic compounds gives rise to properties such as absorption and emission of circularly polarised light, magneto-chiral anisotropy, and spin-selective charge transport, which enable the conceptualisation of novel functions and applications.

My presentation will focus on:

1. The stereoselective synthetic approach to synthesising functional chiral nanostructures
2. How the structural flexibility of helicenes can be exploited to form stable homochiral self-assembled structures
3. A novel class of [n] helicene diimides features through-bond and through-space interactions
4. Unprecedentedly narrowband fluorescence (FL) and circularly polarised luminescence (CPL) from 1,4-B,N-embedded helicenes

Friday, Apr 12th 2024

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFR-H