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

Seminar

Chemistry in Confined Nanospace

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IISc, Bangalore

The properties and functions of chemical entities in confined nanospace are expected to be different from their conventional bulk properties due to restricted translational and rotational motions. Such restricted degree of freedom along with other non-covalent interaction/s may allow to stabilise unusual conformations of compounds in confined nanospace of molecular cavity. Our recent efforts on designing chiral molecular vessels including their chiral recognition will be discussed in my lecture. A recently developed strategy on constructing enantiopure cage (Figure 1) without using chiral donor/acceptor will be highlighted in the lecture. My lecture will also focus on the use of confined space for the separation of polyaromatic hydrocarbons by aqueous extraction and stabilisation of transient merocyanine in confined space of aqueous molecular vessels.

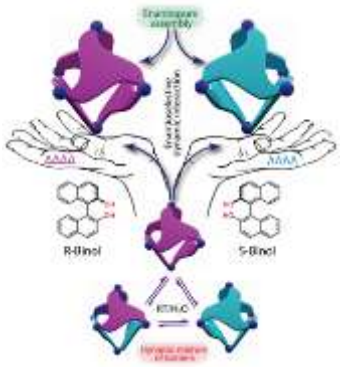

Figure 1 Guest induced enantiopure cage formation

References:

1 P. Howlader, B. Mondal, P. P. Chowdhury, E. Zangrando, P. S. Mukherjee, *J. Am. Chem. Soc.* **2018**, *140*, 7952.
2 R. Saha, B. Mondal, P. S. Mukherjee, *Chem. Rev.* **2022**, *122*, 12244.
3 P. Howlader, E. Zangrando, P. S. Mukherjee, *J. Am. Chem. Soc.* **2020**, *142,* 9070.
4 P. Howlader, S. Mondal, S. Ahamed, P. S. Mukherjee, *J. Am. Chem. Soc.* **2020**, *142,* 20968.
5 B. S. Arppitha, M. Venkataswarulu, P. Bhandari, J. K Clegg, P. S Mukherjee, *J. Am. Chem. Soc.* **2022**, *144,* 7504.
6 R. Banerjee, D. Chakraborty, P. S. Mukherjee, P. S. Mukherjee, *J. Am. Chem. Soc.* **2023**, *145,* 7692.

Friday, Oct 13th 2023

11:30 AM (Tea / Coffee 11.15 AM)

Auditorium, TIFR-H