Photochromism in Confined Space

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Abstract

Properties of chemical entities in confined nanospace are expected to be different from their bulk properties due to restricted rotational and vibrational motions. Such restricted motions along with other interaction/s may allow to stabilize unusual conformations of compounds in confined space of molecular cavity. Unusual behavior of photochromic molecules like spiropyrans and donor acceptor Stenhouse adducts in confined molecular vessels and stabilization of transient merocyanines in molecular vessels will be discussed (Figure-1). The lecture will also highlight the stability of donor acceptor Stenhouse adducts in aqueous medium in presence of molecular barrel.[1-2] Spiropyran functionalized molecular cages including solid state photochromism of such cages will also be discussed.[3]

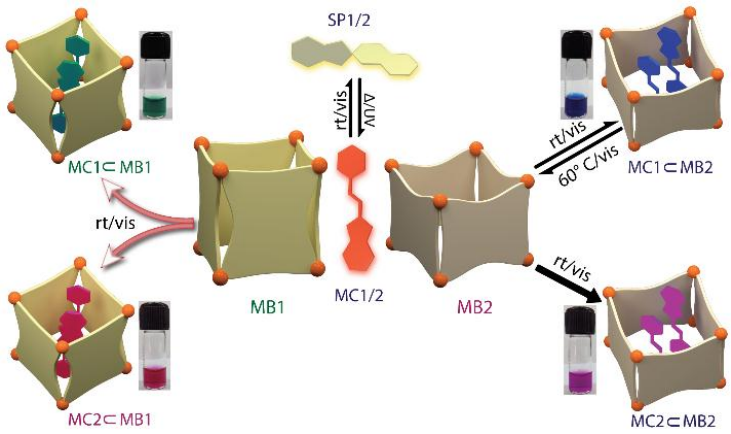

Figure-1: Unusual behavior of photochromic molecules in molecular vessels.

References

1. Howladar, P.; Mondal, B.; Chowdhury, P.; Zangrando, E.; Mukherjee, P. S. *J. Am. Chem. Soc.* 2018, *140*, 7952.
2. Saha, R.; Devaraj, A.; Bhattacharyya, S.; Das, S.; Zangrando, E.; Mukherjee, P. S. *J. Am. Chem. Soc.* 2019, *141*, 8638.
3. Mondal, B.; Acharyya, K.; Mukherjee, P. S. *J. Org. Chem.* 2017, 82, 7783.

Bio-Sketch of the Speaker

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Partha worked with Prof. N. Ray Chaudhuri at Indian Association for the Cultivation of Science (Kolkata) for his Ph.D on Cu(II) coordination polymers and their magnetic properties. Subsequently he moved to the University of Utah to work with Prof. Peter J. Stang as a postdoctoral fellow. In 2004 he moved to Germany and worked with Prof. Herbert W. Roesky as a Humboldt fellow, in 2005 he joined IISc as a faculty member. He is currently a Professor at the department of Inorganic and Physical Chemistry, Indian Institute of Science (IISc). His current research interests are in the areas of self-assembly of discrete organic and coordination molecular architectures and chemical transformations in confined nanospace of such architectures. He is the recipient of a young scientist medal of the Indian National Science Academy, Shanti Swarup Bhatnagar prize in chemical sciences, Young Affiliateship of The World Academy of Sciences (Trieste), Swarnajayanti Fellowship of the Govt. of India, and NASI-SCOPUS young scientist award. Mukherjee was/is in the editorial advisory board of *Inorganic Chemistry (ACS)*, *Inorganic Chemistry Frontiers (RSC)*, *Inorganica Chimica Acta (Elsevier)*, and *Scientific Reports (Nature-Springer)*. He is currently serving as an Associate Editor of *Inorganic Chemistry*. Prof. Mukherjee has published over 175 papers in journals of international repute with current *h-index*=56 of his publications.