

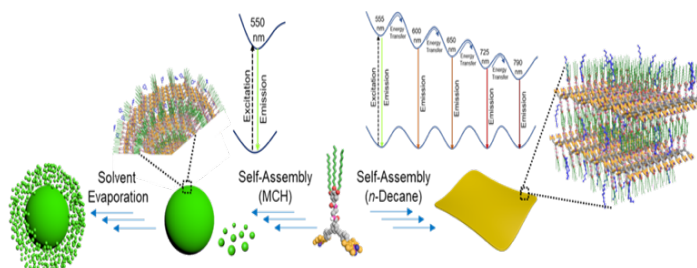
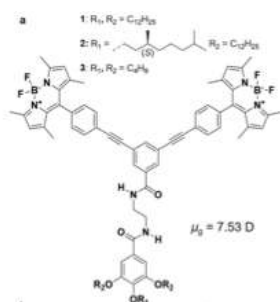
## Solvent Controlled Bodipy Self-assemblies

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**ABSTRACT:** Multitopic noncovalent interactions and molecular assemblies are the main driving force to the formation of hierarchical structures namely supramolecular polymers. Since these types of soft materials are formed of weak and reversible noncovalent interactions, the solvent in which they are formed plays an important role in their formation and properties. This is particularly true of functional dyes and  $\pi$ -systems. Especially in the case of the self-assembly of polar dyes, the solvent used is detrimental in controlling the kinetics, the shape, size and properties of the assemblies. Among the different

chromophore-linked  $\pi$ -systems, 4,4-Difluoro-4-bora-3a-4a-diaza-s-indacene (Bodipy) is a preferred chromophore due to its synthetic accessibility and tunable emission behavior. In this talk, we demonstrate how the self-assembly of a tailor-made Y-shaped Bodipy (see structure below) is influenced in its morphological and optical properties by the solvents used. In methylcyclohexane spherical particles with a single emission peak is formed, however in n-decane, 2D-supramolecular polymeric sheets with multiple emission are formed.



**KEY WORDS:** supramolecular polymer,  $\pi$ -systems, chromophore

### References

1. V. K. Praveen, B. Vedhanarayanan, A. Mal, R. K. Mishra, A. Ajayaghosh, *Acc. Chem. Res.* 2020, 53, 496.
2. S. Cherumukkil, B. Vedhanarayanan, G. Das, V. K. Praveen, A. Ajayaghosh, *Bull. Chem. Soc. Jpn.* 2018, 91, 100.
3. S. Cherumukkil, S. Ghosh, V. K. Praveen, A. Ajayaghosh, *Chem. Sci.* 2017, 8, 5644.
4. G. Das, S. Cherumukkil, A. Padmakumar, V. B. Banakar, V. K. Praveen, A. Ajayaghosh, *Angew. Chem. Int. Ed.* 2021, 60, 7851.