Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Colloquium

Inorganic-organic 'Soft' Hybrids: Interplay between Morphology/Size and Functionality

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Recently, there has been growing interest for fabrication of nanoscale porous coordination polymers (PCPs) or metal-organic frameworks (MOFs) of different morphologies for controlling and tuning the size dependent properties. Nanoscale MOFs (NMOFs) show enhanced catalytic activities, sorption/separation processes and sensing properties over the respective bulk MOFs. Further, NMOFs can be stabilized on the active surfaces of aminoclay or graphene toward nanocompsite materials where novel and enhanced properties are realized. MOF gels can also be prepared by the self-assembly of smartly designed 'Low Molecular Weight Gelator' (LWMG) and a suitable metal ion and it is a promising methodology for preparing novel functional 'soft' materials. Such nanoscale hybrids show solution processability which is useful for biological applications and also for device fabrication.

This talk would try to introduce different design strategies and synthetic methodologies for fabricating of nano/mesoscale scale 'soft' hybrids with different morphologies and their diverse applications including tunable surface area and selective sorption, bimodal imaging, self-cleaning behavior and tunable emission for sensing and light harvesting applications.

Wednesday, Mar 21st 2018

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H