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

Seminar

Tunable Frameworks: Fit-to-purpose materials for energy, sustainability, and healthcare

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Khalifa University, Abu Dhabi

A simple method to tune the physicochemical properties of framework materials (COFs/c-MOFs) in their macroscopic forms (powder or membrane) is highly desirable and advantageous for technology transfer. We have recently developed multiple strategies to synthesize either powder or free-standing membranes of COFs/c-MOFs. We introduced a novel pre-synthetically controlled framework growth strategy to fine-tune their properties. We have explored these tunable materials for water purification, ammonia production, resource recovery, energy storage, and biosensing applications. Notably, the results obtained from these novel materials are significantly superior to those reported previously. Our materials' high efficiency and ease of implementation demonstrate the advantages of our findings and hold great promises for developing framework-based materials for energy and environmental applications. During the talk, I will provide an overview of my group's activities and progress in this exciting field.

Friday, Jul 10th 2026

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

Auditorium, TIFRH