

## **Internal Seminar**

### **Design, Self-Assembly, and Functional Applications of Supramolecular and MOF-Based Materials**

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Supramolecular polymers have gained significant attention for their dynamic properties and applications in stimuli-responsive and functional materials. Among various molecular recognition motifs, crown ethers offer versatile host-guest interactions for constructing tuneable supramolecular architectures. In this talk, I will present the approaches taken towards the rational synthesis of crown ether-based supramolecular motifs and their self-assembly behaviour, with the aim of developing responsive hybrid materials. In parallel, I will also discuss about, fabrication of glass microcapillaries for spatially programmed, nanometre-thick MOF film that simultaneously drives fluid uptake by capillary action and performs localised analyte enrichment within a single, self-contained channel. The functionalised capillary provides an efficient platform for biomarker analysis, as it is used for selective separation and detection of neurotoxic metabolite quinolinic acid and kynurenine.

***Thursday, Oct 8<sup>th</sup> 2026***

***14:30 Hrs***

***Classroom - 1, TIFRH***