

## **Seminar**

# **Minimalistic Structured Peptide-Based Bioinspired Materials and Nanotechnology**

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My background of research focused on the molecular self-assembly of bio-inspired building blocks into novel architectures with fascinating (bio-) functionalities. Self-assembly in living systems allows individual macromolecules to assemble into a wide set of supramolecular architectures. In this way, nature capitalises on self-assembly to convert chemically simple building blocks into sophisticated materials that function cooperatively in living systems. Motivated by nature, bio-inspired nanotechnology aspires to harness natural compounds and nanostructures for various technological applications. The main goal of my research are (i) to design artificial self-assembling minimal systems that mimic protein secondary structures, (ii) to understand how to program biomolecules with the necessary information for self-ordering into complex and functional architectures, (iii) to study novel (bio)functionalities in the designed molecule-based platforms.

### **References:**

1. S. Bera et al. *Nat. Mater.* 2019, 18, 503.
2. S. Bera et al. *Nat. Commun.* 2021, 12, 1.
3. S. Bera et al. *ACS Appl. Mater. Interfaces.* 2022, 14, 46827.

***Tuesday, Jan 24<sup>th</sup> 2022***

***4:00 PM (Tea/Coffee at 3:45 PM)***

***Auditorium, TIFR-H***