

Student Talk
Inter-Disciplinary Explorations in Chemistry (I-DEC 2018)

**Coordination-Based Molecular Assemblies (CBMA):
Surface Fabrication and Functional Aspects**

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Abstract:

Molecular assemblies (MA) are inherently related to functional nanostructures having a wide range of applications in molecular electronics. Therefore, controlled growth of MAs on solid surface as well as at liquid-liquid interface is highly significant. Among different techniques, coordination-based layer-by-layer (LBL) method is a promising one for accessing controlled and homogeneous growth of MAs on solid surface. In this context, we have successfully assembled an imidazolium-based Fe(II)-bis-terpyridine network on conductive ITO-glass substrate, via stepwise coordination of the metal/ligand building blocks.

The LBL growth of these coordination-based molecular assemblies (CBMAs) led to the formation of one dimensional (1D) nanowires on the ITO surface. The electrochemical and optical properties of the functionalized material have been studied. In parallel, the same material has been allowed to grow on a liquid-liquid interface as well to correlate the physicochemical properties. In this talk I'll discuss the details of the surface fabrication and some key functional aspects of the CBMAs.

References:

1. Jena, S. R.; Choudhury, J. Manuscript under preparation.

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Bio-Sketch of Speaker

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Satya is from Balasore district, Odisha. He completed B.Sc. (Chemistry Major) in 2012 from Fakir Mohan University and M. Sc. in 2014 from Utkal University. After completing M. Phil. degree in 2015, he moved to IISER Bhopal in January 2016 to pursue Ph.D. under the guidance of Dr. Joyanta Choudhury in the Department of Chemistry. He works on fabrication and application of functional molecular assemblies on surface.