CBC SEMINAR ANNOUNCEMENT

Professor Ayyappanpillai Ajayaghosh
National Institute of Interdisciplinary Science and Technology (NIIST), CSIR

π-Gelators: A New Class of Soft Functional Materials

Molecular assembly using weak noncovalent forces is a powerful strategy for the creation of soft functional materials. A variety of supramolecular architectures of different size and shape can be created by noncovalent assembly of molecules. π-Conjugated molecules such as fused polyaromatics, linear π-systems and functional organic dyes are important building blocks for the creation of such architectures. The strong intermolecular interaction and arrangements facilitate modulation of the electronic properties such as fluorescence electronic conductivity, charge-carrier mobility etc. of the molecular building blocks. By combining the principles of molecular assembly with short linear π-systems, we could develop a new class of soft materials called π-gelators. They form gels from a variety of solvents which upon the removal of the solvent results in nano to micro sized supramolecular architectures. These soft structures can be used for the creation of hybrid materials with interesting properties. The fluorescence of these materials is highly sensitive to the external stimuli. They are good excitation energy donors to suitable acceptors. They are useful as sensors for the detection of explosives and volatile organic compounds. They can be used for the creation of security labels for the protection of documents. A summary of our understanding on this new class of materials will be presented.

References:

Date: 23rd September 2014 (Tuesday)
Time: 11:00am – 12:30pm
Venue: NTU SPMS CBC Building Level 2, Conference Room
Host: Asst Professor Zhao Yanli