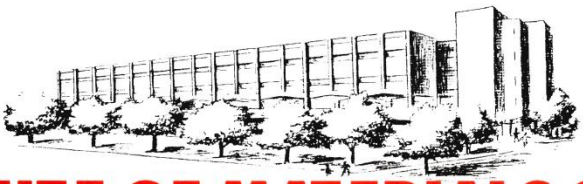
UNIVERSITY OF CONNECTICUT



INSTITUTE OF MATERIALS SCIENCE

POLYMER PROGRAM SEMINAR

"Bioinspired Synthesis of Organic Nanomaterials: From Supramolecular Helix to Two-dimensional"

Prof. Qianli 'Rick' Chu
University of North Dakota

Friday, February 6, 2015
11:00 AM, IMS Room 20

The construction of organic nano-targets with well-controlled structures is a synthetic challenge. Our research group is exploring one aspect of this challenge by using a bioinspired approach. In the first part of the presentation, I will show the β-sheet-like nanostructures that spontaneously assembled under mild conditions from symmetric supramolecular atropisomers, such as *N,N',N''*-tris(*n*-octyl)benezene-1,3,5-tricarboxamide (BTA). By introducing cyclohexyl side chains as 'pillars' between the sheets, the lamellar material gained the capacity to accommodate and release guest molecules with conformational transformation of the cyclohexyl groups. This amphiphilic material formed nonpolar cavities and displayed dynamic host-guest responses, which are important for green applications such as H_2 and CH_4 storage. In the second part of my talk, I will discuss the synthesis of covalently bonded ladders and two-dimensional (2D) polymers from symmetric monomers. The novel polymeric materials contain up to 84% by mass sustainable raw materials. The ladder and 2D polymers have potential applications in producing novel composites for fuel-efficient transportation on all scales, from aircraft to automobiles.

**For further information, please contact YH Chudy ychudy@ims.uconn.edu*

Polymer Program, Institute of Materials Science, University of Connecticut, Storrs, CT 06269-3136 www.polymer.ims.uconn.edu

IMS INSTITUTE OF MATERIALS SCIENCE