Physical Chemistry Seminar

Tuesday, April 28, 2009 | **11:00 a.m.** | **Room 1315 Chemistry Building**

Hierarchical Self-Assembly of Materials

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The grand challenge in materials chemistry is finding self-assembly pathways to highly functional systems with structures across scales using small molecules, polymers, ions, and nanoscale particles. Both biological and electronic functions are of great interest given their relevance to medicine and energy. In this lecture I will review self-assembly pathways developed in our laboratory for supramolecular materials using designed molecules. One of the self-assembly pathways to be described generates a large diversity of bioactive nanostructures that can be used to regenerate organs and tissues and also in cancer therapies. A second system to be described involves the self-assembly of polymers and small molecules leading to macroscopic constructs that self repair and store nanostructures. One final system to be discussed is the formation of highly efficient photoconductors in which self-assembly can synergistically couple to the formation of inorganic lattices to generate interesting electronic properties.

Refreshments will be available prior to the seminar at 10:45 a.m. outside room 1315

Graduate Students may meet with the speaker at 1:15 p.m. in Room 8305f