Conjugated polymers are emerging materials for many useful applications. One of the attractive applications of conjugated polymers is sensor design, because of their signal-amplifying properties. While only the receptors bound with analytes can contribute to the sensory signal in monomeric fluorescent chemosensor systems, any single occupied receptor on a conjugated polymer backbone can alter the emission property of the entire conjugated polymer chain, thus realizing an amplified sensory signal. Receptors can be rationally designed and covalently connected to a conjugated polymer main-chain. This talk will cover the concept, design principles, and applications of conjugated polymer-based sensors especially biosensors.

Biography: Jinsang Kim is an assistant professor having a joint appointment in Department of Materials Science and Engineering, Chemical Engineering, Biomedical Engineering, and Macromolecular Science and Engineering at the University of Michigan, Ann Arbor. He holds a M.S (1993) and a B.S. (1991) from Seoul National University, Korea, both in Fiber and Polymer Science. He earned his Ph.D. in 2001 in materials science and engineering from the Massachusetts Institute of Technology, where he studied the design, synthesis, and assembly of conjugated sensory polymers and energy transport properties in the controlled structures. He is also an expert in genetically engineered protein research. His postdoctoral work in this area at Caltech involved the expression of artificial genes to determine the extent to which artificial genetic information can be used to encode supramolecular assembly in macromolecular systems. He has won several prestigious awards including 2002 IUPAC Prize for Young Chemist, 2002 ACS ICI Award, and 2000 MRS Graduate Student Gold Award. His current research interests at the UM are self-signal amplifying molecular biosensors, artificial actuators, polymer light emitting diodes, and flexible solar cells under NSF grants.

When: 1:30 p.m., Wednesday, March 1, 2006
Where: Engineering Building, Room 2409

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