



The Spring 2008 Condensed Matter Seminar series presents:

Prof. Zhi-Feng Huang

(Wayne State University)

*Modeling Spatio-temporal Pattern Evolution
in Non-equilibrium Soft Matter*

Mon., Jan. 21

4:00 P.M.

304 Robeson Hall

Abstract:

A great deal of interest in soft matter and its applications as advanced materials arises from the phenomenon of spatio-temporal pattern formation and self-assembly. Despite its potential, spontaneous self-assembly usually leads to defected structures, fact that limits their applicability. I will first discuss general properties and mechanisms of ordered pattern evolution in such nonequilibrium systems, including dynamics of topological defects and domain coarsening in some potential and nonpotential model systems. Our recent theoretical research on mesophase dynamics of block copolymers will be then introduced. Particular attention will be paid to one of the major challenges for widespread applications of nanostructured materials: the achieving of long range order. Our efforts on understanding structure, dynamics, and response of nanoscale phases will be also discussed.