1004-35-156 **Nicolas Dirr** and **Nung Kwan Yip*** (`yip@math.purdue.edu`), Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47907. *Pinning and De-Pinning Phenomena in Materials Phase Boundary Motions.*

The talk will discuss some mathematical questions motivated by the motion of materials phase boundaries under the combined effects of heterogeneous environment and an external driving force, F. The phenomenology is the existence of pinning states for small values of F and the appearance of genuine motion when F is above some critical threshold value. The emphasis is the understanding of the effective speed of phase boundary motion near the transitional regime. (Received January 23, 2005)