Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Effect of Annealing Temperature on the Surface Composition of Block Copolymers with Semifluorinated Side Chains K.E. SOHN, A. HEXEMER, UCSB, S. KRISHNAN, M. PAIK, C.K. OBER, Cornell, E.J. KRAMER, UCSB, D. FISCHER, NIST — The effect of the annealing temperature on the surface composition and orientation of semifluorinated side chains in styrene-isoprene based block copolymers has been studied using NEXAFS spectroscopy, angle resolved XPS, and AFM. Annealing brings the fluorogroups to the surface due to their lower surface energy, resulting in a decrease in styrene content at the surface. NEXAFS experiments on samples annealed in high vacuum and slowly cooled show orientation of the CF_2 helix of fluorinated side chains as characterized by a helix orientational order parameter, S_{helix}, (relative to the surface normal) that is increased by annealing at the optimum temperatuer. NEXAFS measurements during heating in-situ heating reveal how the orientation progresses at the annealing temperature.

Karen Sohn
UCSB

Date submitted: 04 Jan 2006 Electronic form version 1.4