Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

**Stimuli-Responsive Surfaces from Two-Component Polymer Brushes** YING JIANG, DONG MENG, QIANG WANG, Colorado State University — Stimuli-responsive surfaces can change their structure and composition in response to subtle changes in the surrounding environment (e.g., temperature, pressure, light, solvent selectivity, ionic strength, type of salt, pH, applied electric field, etc.). Thus the surface properties (e.g., wettability, adhesion, friction, elasticity, and biocompatibility) can be reversibly switched or tuned by these external stimuli. Here we use 3D real-space self-consistent field calculations to study the solvent-response of diblock copolymers A-B grafted to a flat surface by the A block. We focus on the effects of block lengths and grafting density on the surface-layer composition and lateral inhomogeneity of the brush, and compare the copolymer brushes with corresponding binary brushes where both A and B homopolymers are uniformly grafted. We further investigate the use of other external stimuli such as ionic strength, solution pH and applied electric field to enhance the surface switchability and to overcome the lateral inhomogeneity when one of the blocks is charged.

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Date submitted: 22 Nov 2006 Electronic form version 1.4