Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

A Generalized Method for the Preparation of Neutral Brushes from Homopolymer Mixtures SHENGXIANG JI, GUOLIANG LIU, Department of Chemical & Biological Engineering, University of Wisconsin-Madison, FAN ZHENG, FRANZ HIMPSEL, Department of Physics, University of Wisconsin-Madison, PAUL NEALEY, Department of Chemical & Biological Engineering, University of Wisconsin-Madison — We demonstrate a new, generalized approach for the formation of neutral surfaces that uses a ternary blend of hydroxyl-terminated homopolymers A-OH and B-OH and a low MW A-*b*-B block copolymer. The presence of the block copolymer effectively homogenizes the A/B homopolymer mixture before the homopolymers are grafted onto the substrate, thereby preventing macroscopic phase separation of the homopolymer mixture, and maintaining chemical neutrality over the length scales necessary for the self-assembly of block copolymer microdomains. The grafting ratios of the two homopolymers were varied simply by changing the blend ratios. Neutral compositions for P(S−*b*−MMA) and P(S-*b*-2VP) were located using this binary homopolymer mixture strategy.

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Date submitted: 27 Nov 2007 Electronic form version 1.4