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Neutron Reflectivity Study of dPS Brushes Grown from an Inimer Embedded Photopolymer Matrix ONOME SWADER, Department of Chemistry, University of Tennessee, Knoxville, TN, DAMLA KOYLU, KENNETH CARTER, Polymer Science and Engineering Department, University of Massachusetts, Amherst, MA, MARK DADMUN, Department of Chemistry, University of Tennessee, Knoxville, TN — Robust methods for directing the self-assembly of macromolecules over large areas are necessary in order to meet the demands for fabrication of next generation devices. Polymer brushes grown from soft interfaces composed of an inimer embedded photopolymer (PP) network provide a unique method to create tuned surfaces and interfaces for such devices. In this study, neutron reflectivity is used to characterize such functionalized interfaces. Inimer concentration and the amount of monomer available for polymerization was systematically varied in an attempt to nanoscopically tune brush growth. These results suggest that the brushes are not initiated at one particular interface, but rather throughout the PP network. Further analysis revealed that brush density increased as the amount of inimer concentration in the PP network increased. However, it is interesting to note that the brush at the surface of the PP network is significantly less dense than in the melt.

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