

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Recent developments in multivariant surface-tethered polymer assemblies RAJENDRA BHAT, MICHAEL TOMLINSON, JASON STONE, JAN GENZER, N.C. State University — Surface-tethered polymer brushes prepared via surface-initiated controlled/“living” radical polymerization represent an effective tool for tuning the physico-chemical properties of surfaces. We have recently developed methods leading to assemblies of surface-tethered polymers with continuously varying grafting density, molecular weight, and composition. In this presentation, we will demonstrate how these assembling concepts can be utilized to: 1) study the kinetics of surface-initiated controlled/“living” radical polymerization, 2) systematically study the phase behavior of diblock and triblock copolymers upon exposure to selective solvents, 3) study the behavior of block copolymer polyampholyte brushes, and 4) explore the wettability transitions (superhydrophobic/superhydrophilic) using thermoresponsive polymer brushes on topologically corrugated substrates.

Jan Genzer
N.C. State University

Date submitted: 22 Nov 2005

Electronic form version 1.4