

Abstract Submitted
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The Time Evolution of the Surface Segregation of Hyperbranched Molecules from a Linear Matrix ONOME SWADER, MARK DADMUN, Department of Chemistry, University of Tennessee, Knoxville, TN, LIAN HUTCHINGS, RICHARD THOMPSON, Department of Chemistry, Durham University, Durham, UK — Modification of a surface by the selective surface segregation of an additive in a mixture is a process with many commercial applications including biocompatibility, wettability, and anti-fouling in coatings. In a blend of branched and linear polymers, there exists an entropic driving force for the selective surface segregation of the branched polymer. Unfortunately, a systematic study of the impact of the branched copolymer structure on the dynamics and thermodynamics of this surface segregation is not currently available. Neutron reflectivity experiments that seek to fill this void have been completed and will be discussed. High molecular weight poly(styrene) (PS) hyperbranched molecules, hypermacs (HM) and dendrimacs (DM), with 10 % HM or DM and 90 % deuterated PS are the model systems studied. Reflectivity profiles for all blends were obtained as a function of annealing time from 30 minutes up to 48 hours.

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