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The effect of variation in conformational size in pom-pom polymer on bulk and surface thermodynamics SEWOO YANG, NAMHEUI LEE, RODERIC P. QUIRK, MARK D. FOSTER, The University of Akron, BOUALEM HAMMOUDA, SUSHIL SATIJA, National Institute of Standards and Technology — We have investigated the effect on bulk and surface thermodynamics of changing the size of the linear portion between junctions of a pom-pom polymer in blends of linear and branched polystyrene (PS). A series of pom-pom PS synthesized using anionic polymerization had well-defined structures and narrow molecular weight distributions. Small Angle Neutron Scattering (SANS) measurements of bulk blend samples revealed that varying the linear portion of the pom-pom branched polymer altered the effective interaction parameter. In addition, the purely entropic contribution to the interaction parameters was estimated by extrapolating data measured in blends with linear PS-*r*-deuterated PS linear copolymers having different degrees of deuterium labeling Neutron Reflectometry (NR), and Surface Enhanced Raman Spectroscopy (SERS) measurements show that varying the length of the central linear portion of the pom-pom polymer also affects the surface segregation.

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