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**Interfacial Segregation Driven by Architectural Asymmetry in Blends of Branched and Linear Polymers** JAE S. LEE, NAM-HEUI LEE, ALEXEI P. SOKOLOV, RODERIC P. QUIRK, MARK D. FOSTER, The University of Akron, CHARLES F. MAJKRZAK, National Institute of Standards and Technology — The effects of the number of branch points and number of chain ends in a branched chain on interfacial segregation in binary blends of well-defined, regularly branched polystyrenes with their linear analogues were studied using Neutron Reflectometry (NR) and Surface-Enhanced Raman Spectrometry (SERS). A novel series of molecules in which the number of branch points in the molecule was varied from 1 to 2 to 4 while keeping the number of chain ends fixed at 6 enabled an incisive look at the branch point effects. Similarly, a novel series of molecules in which the number of branch points in each molecule was fixed at 4 and the number of chain ends varied among 6, 9, and 15 provided the opportunity to focus on end effects. The branched molecules segregate preferentially to both interfaces of blend films. The strength of the segregation generally increases when increasing the number of branch points while the number of end groups is kept at six. The degree of segregation also increases when increasing the number of end groups while keeping the number of branch points constant at four.

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