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Effect of Cross-linking on the Structure and Thermodynamics of Lamellar Block Copolymers ENRIQUE GOMEZ, NITASH BALSARA, University of California, Berkeley, JAYAJIT DAS, ARUP CHAKRABORTY, Massachusetts Institute of Technology — The effect of cross-linking on the structure and thermodynamics of a lamellar poly(styrene-*block*-isoprene) copolymer was studied using small angle X-ray scattering (SAXS), depolarized light scattering (DPLS) and transmission electron microscopy (TEM). The selective cross-linking of the polyisoprene block took place either in the disordered state, in an isotropic ordered state, or in a shear-aligned ordered state. Using DPLS and TEM, the grain structure as a function of cross-linking density was studied. The order-disorder transition temperature for various block copolymer networks was determined as function of cross-linking density, and comparisons are made to a mean-field theory.

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