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Phase Behavior of Binary Mixtures of Block Copolymers having Hydrogen Bonding SUNG HYUN HAN, JIN KON KIM, Pohang University of Science and Technology — The phase behavior of binary mixtures of high molecular weight polystyrene-*block*-poly(2-vinyl pyridine) (PS-*b*-P2VP) and low molecular weight polystyrene-*block*-poly(4-hydroxystyrene) (PS-*b*-PHS) copolymers was investigated by using small angle X-ray scattering and transmission electron microscopy. Both block copolymers exhibited lamellar microdomains. When the weight fraction of PS-*b*-PHS in the blend was less than 0.1, lamellar microdomains are maintained. However, with increasing amount of PS-*b*-PHS, the microdomains are transformed to hexagonally-packed cylindrical microdomains, and body-centered cubic spherical microdomains. This is attributed to the hydrogen bonding between P2VP and PHS blocks.

Jin Kon Kim
Pohang University of Science and Technology

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