

Abstract Submitted
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Microdomain Orientation of PS-b-PMMA Thin Films on the PS grafted Substrates DU YEOL RYU, RUI GUO, EUN-HYE KIM, Yonsei University — The phase transitions and morphologies, specifically the orientation of lamellar microdomains of symmetric polystyrene-*b*-poly(methyl methacrylate) (PS-*b*-PMMA) were investigated with grazing incidence small-angle x-ray scattering (GISAXS) and transmission electron microscopy (TEM). The microdomain orientation in thin films of PS-*b*-PMMA on the substrates with brushed (or grafted) polymers was influenced by the interfacial interactions, where grafting density of underlying PS layers are controlled by the reaction parameters such as time and temperature during grafting to the substrates. When grafting density range of PS brush is adjusted, such a simple and facile route provides the perpendicular orientation of cylindrical and lamellar microdomains in PS-*b*-PMMA films.

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