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**Glass Transition Temperature of Polystyrene Films on Preferential Substrate** HOYEON LEE, SUDHAKAR NAIDU, EUNHYE KIM, DU YEOL RYU, Yonsei University — In thin films, the interfacial interactions at the substrate/polymer and polymer/air influence the transition behavior. When a polymer chains is placed on the substrate of the same chemical identity, an autophobic behavior has been observed. In the present study, glass transition behavior of polystyrene (PS) film on the PS-brush substrates was investigated by the volumetric changes with in-situ ellipsometry, where the brush thicknesses (or grafting densities) are varied. Thickness dependence of transition behavior indicates that a decrease of glass transition temperature with decreasing film thickness was significant in the short PS-brush surface.

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