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Effects of the Adsorbed Polymer Nanolayers on the Dewetting of Polystyrene Thin Films[1] JUSTIN CHEUNG, JIAXUN WANG, NAISHENG JIANG, MAYA ENDOH, TADANORI KOGA, Stony Brook University — It was previously reported that irreversibly adsorbed polymer nanolayers can be produced on solid substrates by thermal annealing. This study sought to determine the impact of the adsorbed nanolayers on film stability of ultrathin polystyrene (PS) films. A series of bilayers composed of the bottom PS adsorbed nanolayers and PS overlayers with different molecular weights were prepared as model systems. The surface structures of the bilayer films annealed above the bulk glass transition temperature were analyzed by using optical and atomic force microscopes. We will discuss the unique roles of the adsorbed polymer chains in the stability of the liquid thin films.

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