## Abstract Submitted for the MAR08 Meeting of The American Physical Society

Order-to-disorder Transition on PS-b-PI Copolymer Thin Film CHANGHAK SHIN, HYUNGJU AHN, DU YEOL RYU, Yonsei University, KWANG-WOO KIM, Pohang Accelerator Laboratory, YONSEI UNIVERSITY COLLABORATION, POHANG ACCELERATOR LABORATORY COLLABORATION — The microphase separation transition in thin film system has been studied for diblock copolymers poly (styrene-b-isoprene) [PS-PI]. It has been broadly known that the microphase- separated or ordered state for block copolymers possesses a lower average density than the disordered state due to the dominant entropic contribution to the free energy. In this study, we used ellipsometry to probe transition temperatures in block copolymer thin films because it makes use of the change in polarization induced upon the reflection light from a covered substrate and allows the calculation of the thickness of the film. The phase behavior is compared based on the volumetric change on transition.

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