

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

The Effect of Hydrogen Bonding on the interfacial width of PS-b-PMMA Block Copolymer Microdomains KYUSEONG LEE, SUNGHYUN HAN, SANGSHIN JANG, JICHEOL PARK, JONGHEON KWAK, JIN KON KIM¹, Pohang Univ of Sci & Tech — Sharp interface between two blocks in block copolymer nano pattern is one of the important issues because of strong demand in industrial applications to nano-patterning. We utilized hydrogen bonding between N-(4-aminomethyl-benzyl)-4-hydroxymethyl-bezamide (BA) and urea (U) at the interface of polystyrene-block-poly(methyl methacrylate) copolymer (PS-PMMA). For this purpose, we first synthesized PS by ATRP method, then the end group was converted to amino group. Next, it was reacted with BA, followed by reaction with 4-pentynoic acid, resulting in alkyne-terminated group (PS-U-BA-alkyne). Also, azide-terminated PMMA was prepared by anionic polymerization followed by end functionalization. Finally, by the azide-alkyne click reaction between PS-U-BA-alkyne and PMMA-azide, PS-U-BA-PMMA was synthesized. We investigated, via small angle X-ray scattering and transmission electron microscopy, phase behavior of PS-U-BA-PMMA.

¹Corresponding Author

Jin Kon Kim
Pohang Univ of Sci & Tech

Date submitted: 12 Nov 2014

Electronic form version 1.4