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***Fddd* structure of SI diblock copolymer melts in PS-rich region**

MIKIHITO TAKENAKA, MYUNG IM KIM, KUNIAKI MATSUDA, HIROKAZU HASEGAWA, Kyoto University, KYOTO UNIVERSITY TEAM — We previously confirmed *Fddd* structure exists as an equilibrium structure in polystyrene-block-polyisoprene (SI) diblock copolymer melts in polyisoprene (PI) rich region. The, we determined the stable region of *Fddd* structure in the phase diagram of SI diblock copolymers. In this study, we investigated whether *Fddd* structure is formed in polystyrene (PS) rich region by using small-angle X-ray scattering (SAXS) and transmission electron microscopy. We found the *Fddd* region in PS-rich region and the region exists as an equilibrium phase. As found in *Fddd* structure in PI-rich region, the ratio of unit cell parameters (a:b:c) estimated from the peak positions of the scattering function agrees with the result of the theoretical calculation by Tyler et al., and the higher order reflections 022, and 004 overlaps with the reflection 111 at the first order peak.

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