Gyroid structure via highly asymmetric ABC and AB blends
SEONGHYEON AHN, JONGHEON KWAK, CHUNGRYONG CHOI, JIN KON KIM, Pohang Univ of Sci Tech — Gyroid structures are very important because of their co-continuous and network structures. However, a block copolymer shows gyroid structures only at 35% volume fraction of one block. In this study, we designed ABC/AB blend system. B (polystyrene (PS)) is the matrix, while A (polyisoprene (PI)) and C (poly(2-vinyl pyridine (P2VP)) are the core part. This blend shows gyroid structures at 20% volume fraction, that is smaller than that observed at diblock copolymer. Morphologies of neat block copolymers and blends were characterized by TEM and small angle X-ray scattering.