Particle and Breath Figure Formation of Triblock Copolymers Having Self-Complementary Hydrogen-Bonding Units

N. Park, M. Seo, B. Lee, and S. Y. Kim*

Department of Chemistry, KAIST, Daejeon, KOREA

Novel triblock copolymers having self-complementary hydrogen-bonding units were synthesized by using reversible addition–fragmentation transfer polymerization. As characterized by dynamic light scattering and atomic force microscopy, these polymers formed noncovalently crosslinked polymer particles and showed an aggregation behavior by intermolecular and intramolecular interactions. At low concentration, polymers formed nanoparticles, and the particle diameter increased with increasing polymer concentration. Well-ordered hexagonal microstructures were prepared by “Breath Figure” technique with the triblock copolymers.

Fig.1. DLS profiles of polymer solution with different concentrations (left) and SEM image of hexagonal ordered structures (right).

* S. Y. Kim, Dept. of Chemistry, KAIST, Guseong-dong, Yuseong-gu, Daejeon 305-701, KOREA; kimsy@kaist.ac.kr; phone +82-42-350-2874