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Synthesis of Well-Defined Miktoarm Star Copolymer composed of Poly(3-hexylthiophene) and Poly(methyl methacrylate) via combining anionic polymerization and click reaction JICHEOL PARK, HONG CHUL MOON, JIN KON KIM, Pohang University of Science and Technology — We synthesized well-defined miktoarm star copolymer composed of regioregular poly(3-hexylthiophene) and poly(methyl methacrylate) ((P3HT)$_2$-*b*-PMMA) by combining anionic polymerization and click reaction. First, we synthesized PMMA terminated with 1,3,5-tris(bromomethy)lbenzene (PMMA-(br)$_2$) by anionic polymerization. Then, the bromide end groups transformed to azide group (PMMA-(N$_3$)$_2$). For the synthesis (P3HT)$_2$-*b*-PMMA, click reaction between ethynyl-capped P3HT and PMMA-(N$_3$)$_2$ was performed. The optical property and thin film morphology of (P3HT)$_2$-*b*-PMMA were investigated by using UV-Vis spectra and atomic force microscopy, respectively.

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