

(Supporting Information)

Helical-Sense Programming Through Polysilane-Poly(Triphenylmethyl Methacrylate) Block Copolymers

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Synthesis of poly(1,1-dimethyl-2,2-dihexyldisilene)-*b*-poly(triphenylmethyl methacrylate) (PMHS-*b*-PTrMA) 1: A typical example for synthesis of the block copolymer is as follows. All reactions were carried out under an atmosphere of argon (99.999%). The masked disilenes (1.47 g, 3.6 mmol) and THF (12 ml) were placed in a 50-ml Schlenk-type flask, equipped with a magnetic stirring bar and a rubber septum. A hexane solution of *n*-butyllithium (0.72 mmol) was added to the solution at $-78\text{ }^{\circ}\text{C}$. The mixture was stirred for 20 min at room temperature and then (–)-sparteine (0.5 g, 5.0 mmol) was added to the mixture, and the mixture was stirred for 5 min. Triphenylmethyl methacrylate (1.00 g, 3.0 mmol) was then added to the reaction mixture at $-78\text{ }^{\circ}\text{C}$. After stirring for 4 h, a few drops of ethanol were added to the mixture. After removal of the solvent, fractional precipitation followed by drying under vacuum gave polymer **1** as a white powder (300 mg, 17%). $M_n = 1.0 \times 10^4$, $M_w/M_n = 1.5$, determined by SEC with polystyrene standards, THF as an eluent; ^1H NMR (THF- d_8 , 300 MHz) δ 0.40 (brs), 0.8–0.9 (br), 1.2–1.4 (br), 7.0–7.6 (m); ^{13}C NMR (THF- d_8 , 75 MHz) δ –0.04, 1.4, 14.6, 23.8, 28.3, 32.8, 35.4, 126.8, 127.7, 128.3, 129.3, 129.5; ^{29}Si NMR (THF- d_8 , 59 MHz) δ –27.5, –35.9; IR (KBr) 1740 cm^{-1} (–COO–).

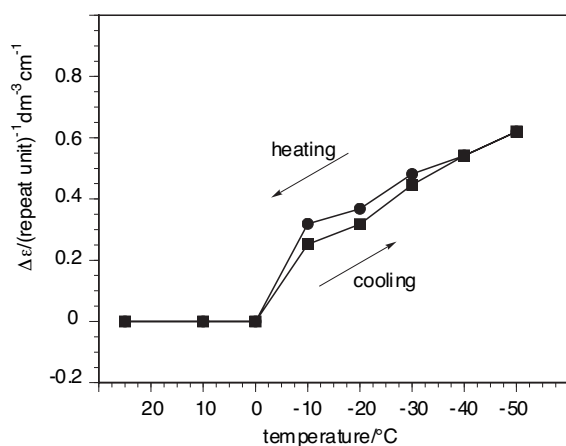


Figure 1S. Thermal hysteresis of the CD signal at 340 nm of PMHS-*b*-PTrMA **1**. The temperature changed from 25 °C to -50 °C in a cooling run and from -50 °C to 25 °C in a heating run.

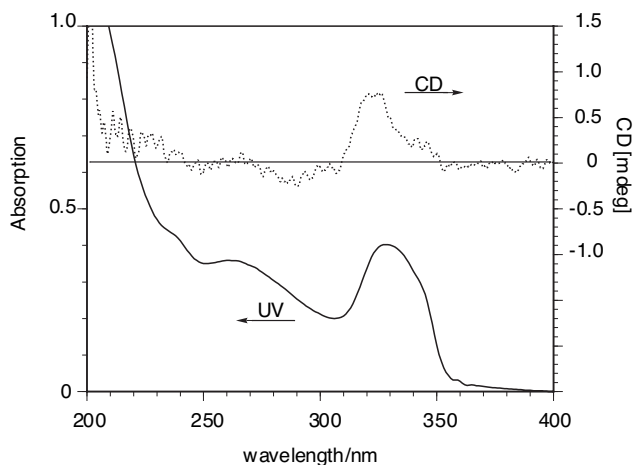


Figure 2S. CD spectra of film of PMHS-*b*-PTrMA **1** at room temperature. Samples for UV and CD measurements were prepared by placing a drop of solution of the block copolymer in THF on the surface of a quartz cell and evaporating it to dryness.