

Supporting Information

Creation of Polymeric Nanostructures by Living Coordination Block Copolymerization of Allene Derivatives Having Fluoroalkyl Substituents Under Polymerization-induced Self-assembly Conditions and Their Application to Superhydrophobic Surface

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1. NMR Spectra

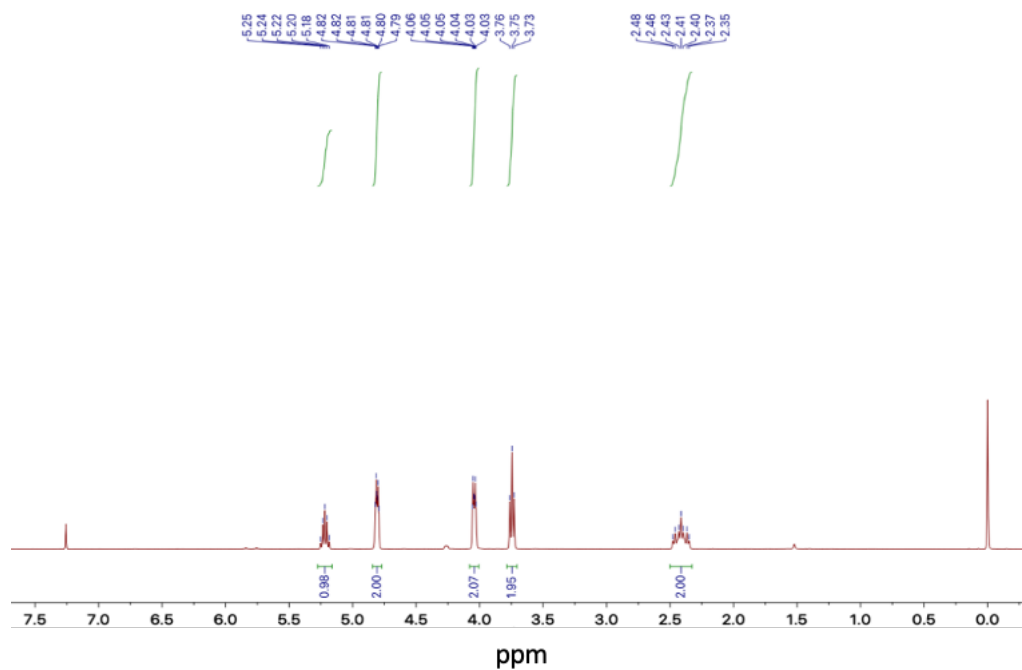


Fig. S1 ^1H NMR spectrum of **1** (300 MHz, in CDCl_3).

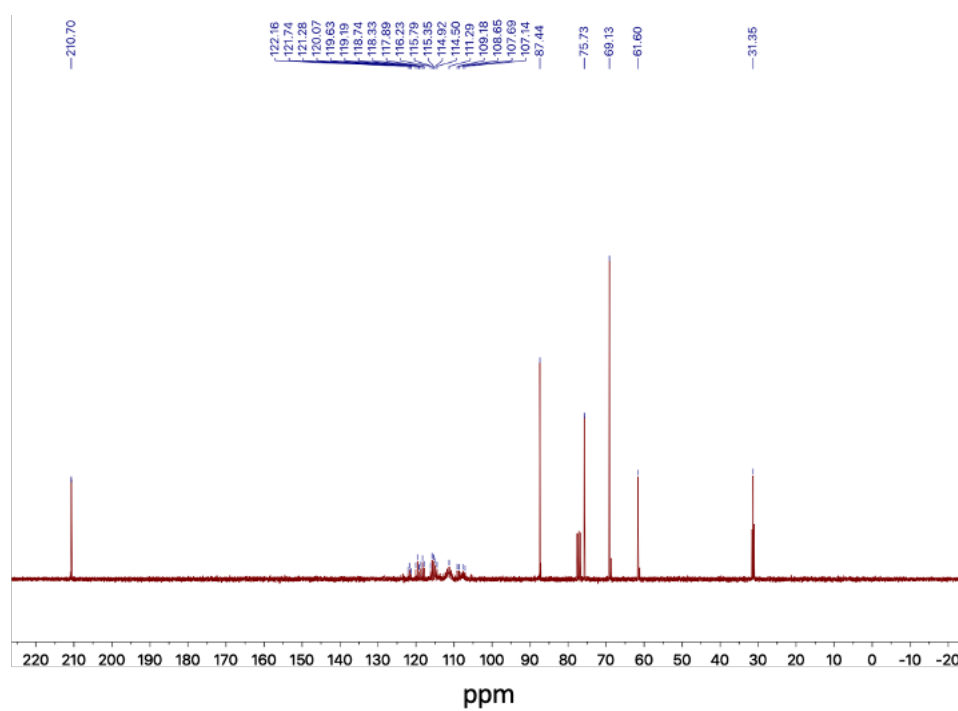


Fig. S2 ^{13}C NMR spectrum of **1** (75 MHz, in CDCl_3).

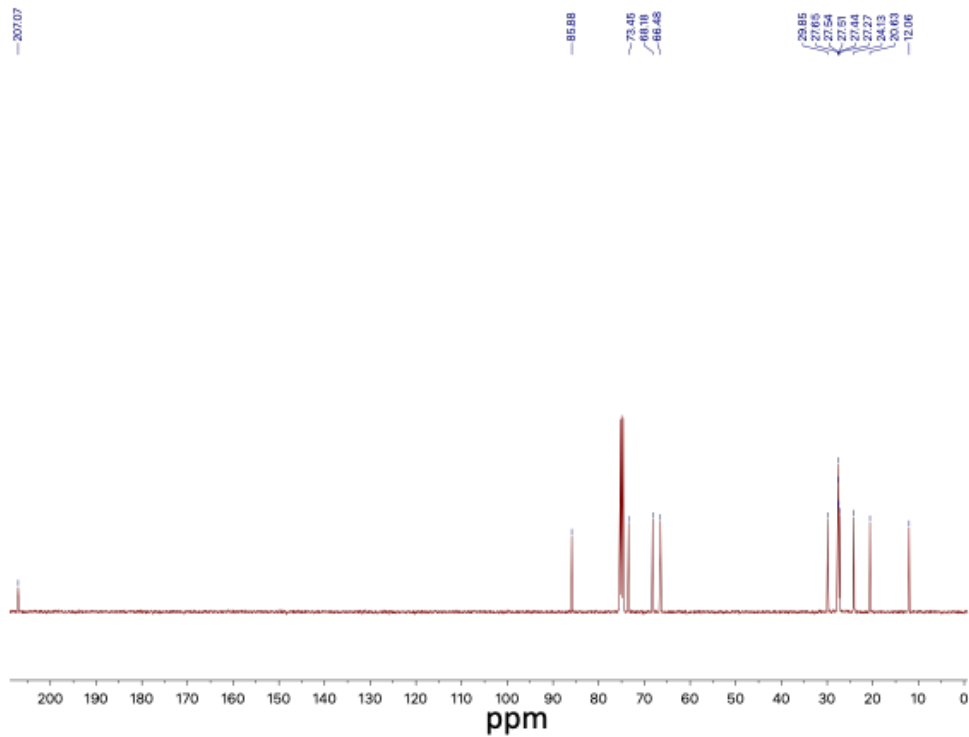


Fig. S5 ^{13}C NMR spectrum of **3** (100 MHz, in CDCl_3).

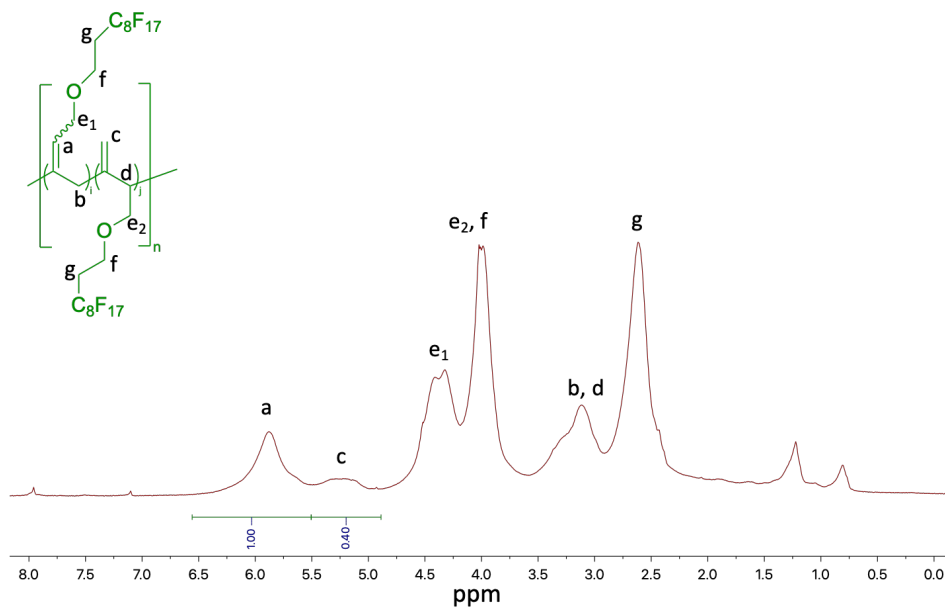


Fig. S6 ^1H NMR spectrum of poly(**1**) prepared in hexafluorobenzene (500 MHz, in hexafluorobenzene).

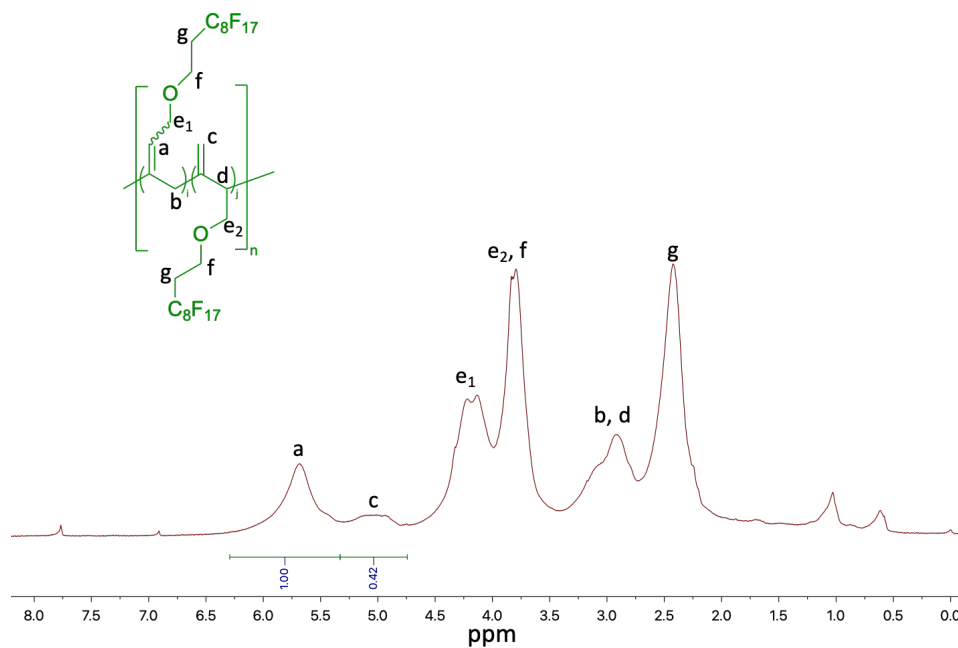


Fig. S7 ¹H NMR spectrum of poly(1) prepared in 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-(trifluoromethyl)pentane (500 MHz, in hexafluorobenzene).

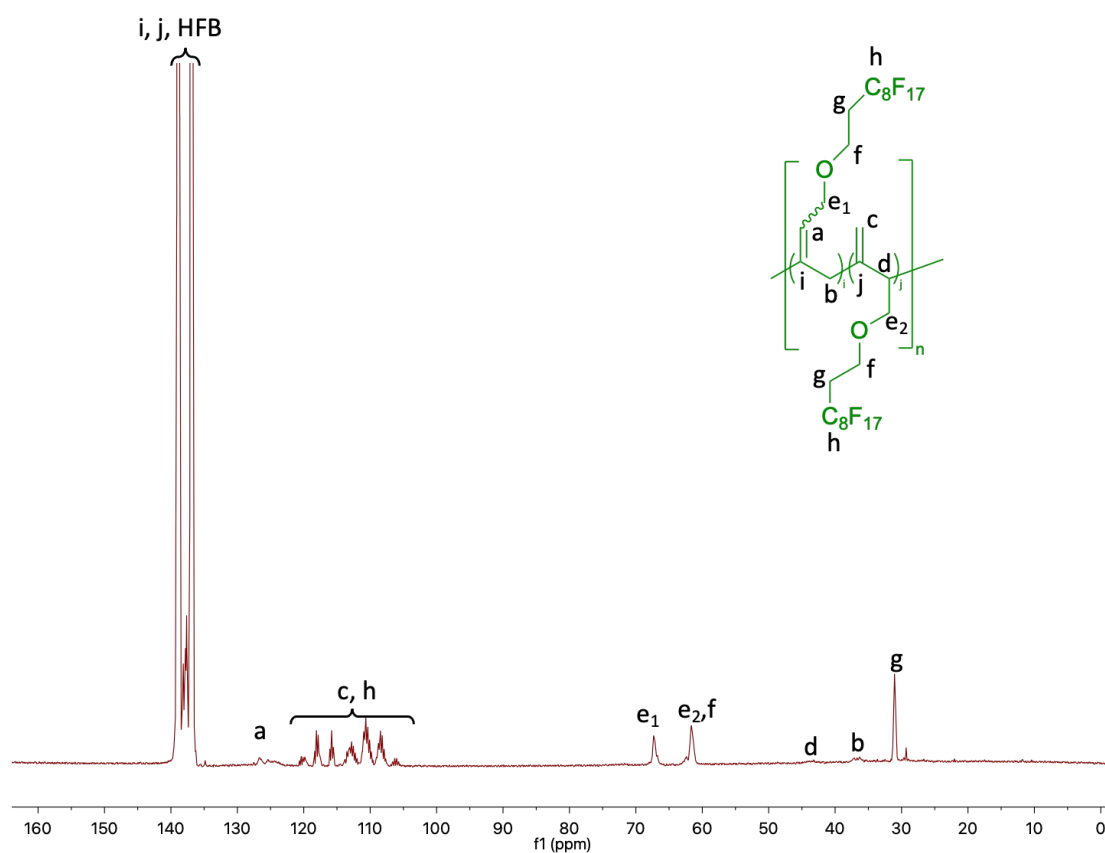


Fig. S8 ¹³C NMR spectrum of poly(1) prepared in hexafluorobenzene (125 MHz, in hexafluorobenzene).

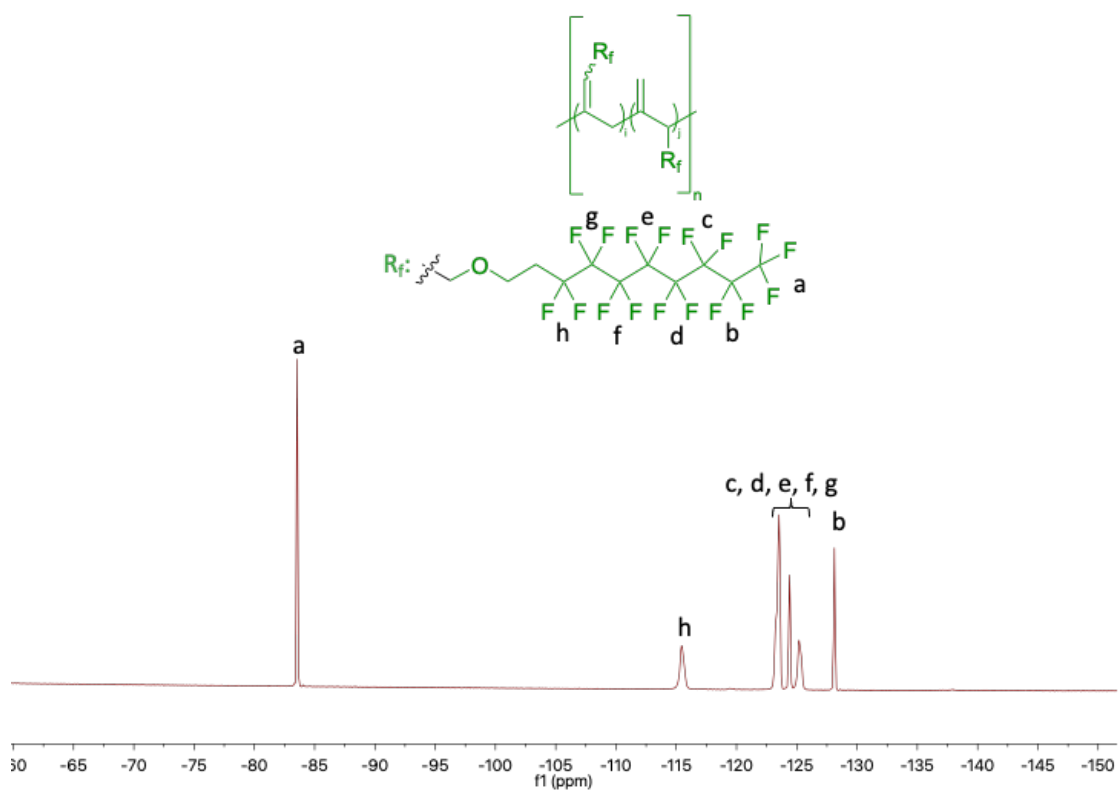


Fig. S9 ^{19}F NMR spectrum of poly(1) prepared in hexafluorobenzene (376 MHz, in hexafluorobenzene).

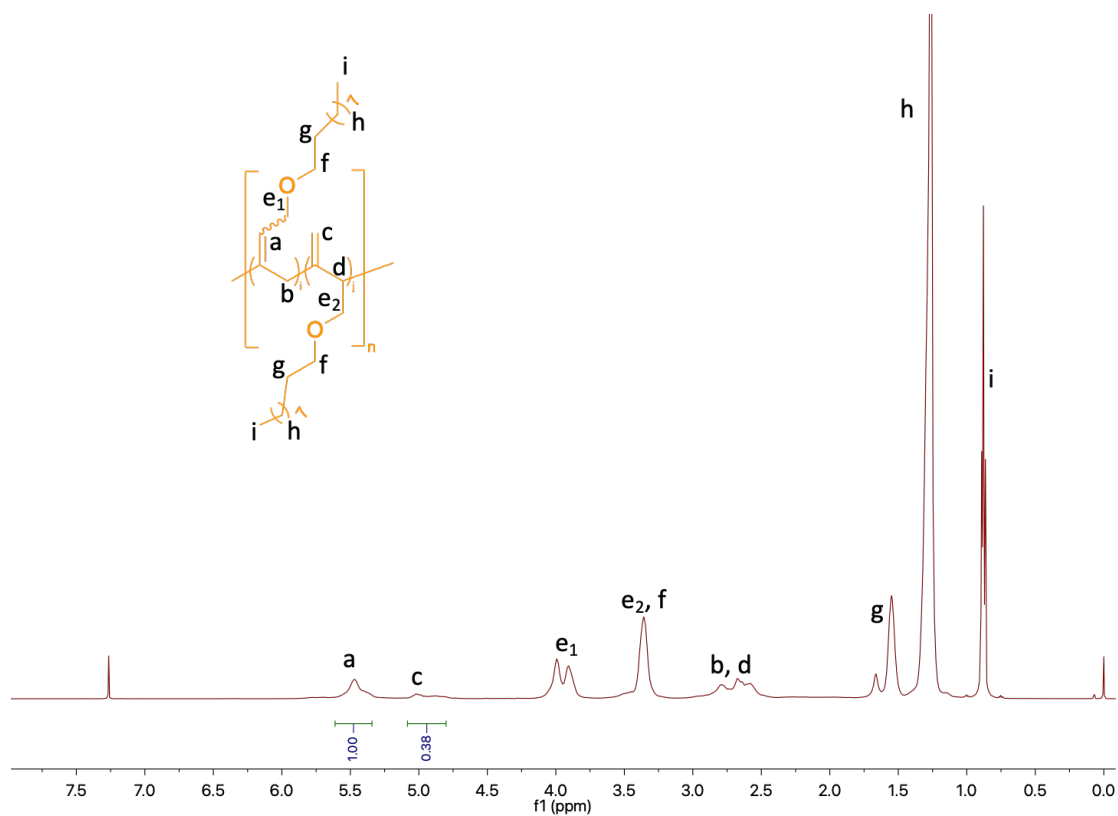


Fig. S10 ^1H NMR spectrum of poly(3) prepared in hexafluorobenzene (500 MHz, in CDCl_3).

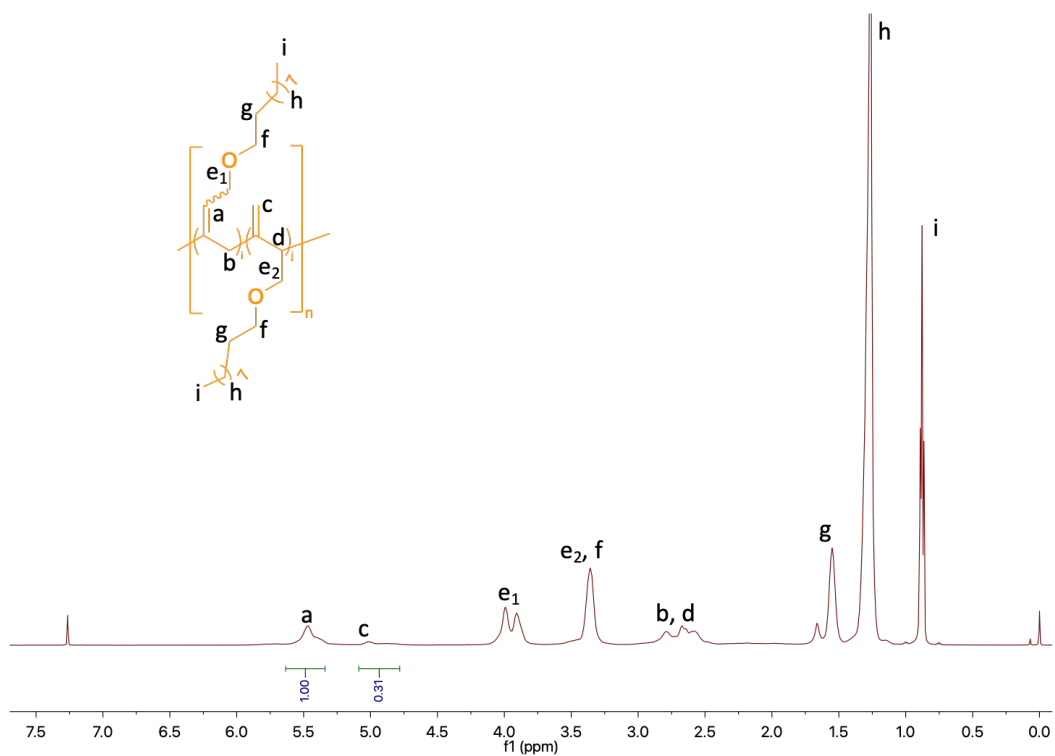


Fig. S11 ¹H NMR spectrum of poly(3) prepared in toluene (500 MHz, in CDCl₃).

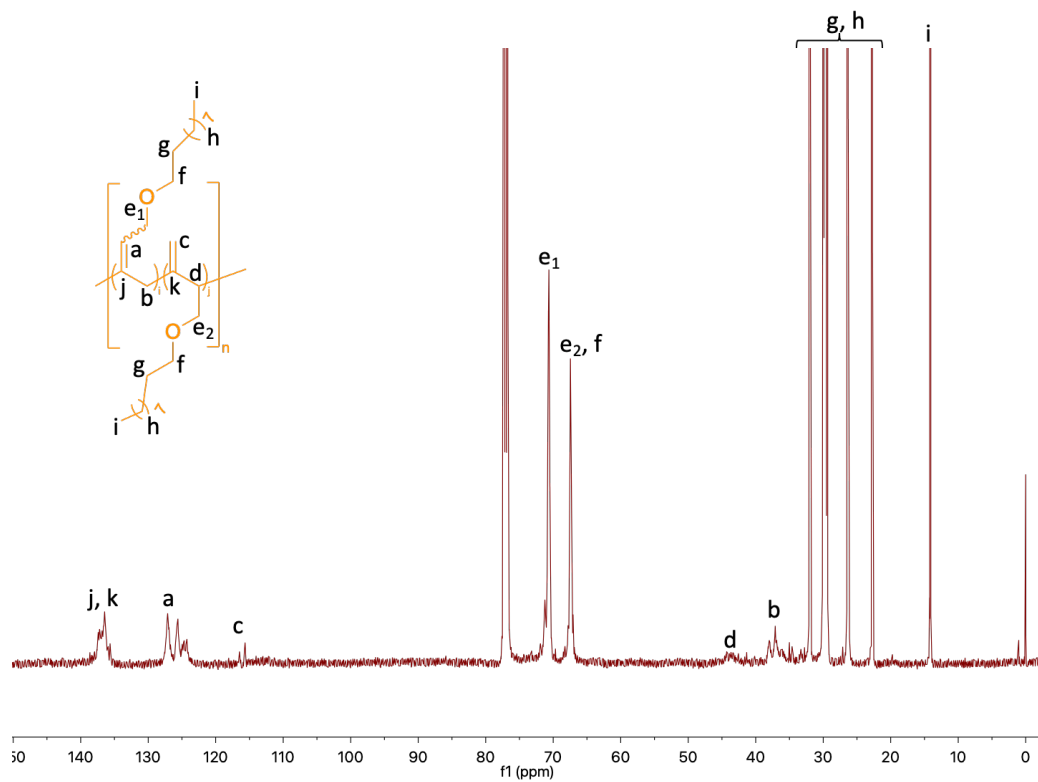


Fig. S12 ¹³C NMR spectrum of poly(3) prepared in hexafluorobenzene (125 MHz, in CDCl₃).

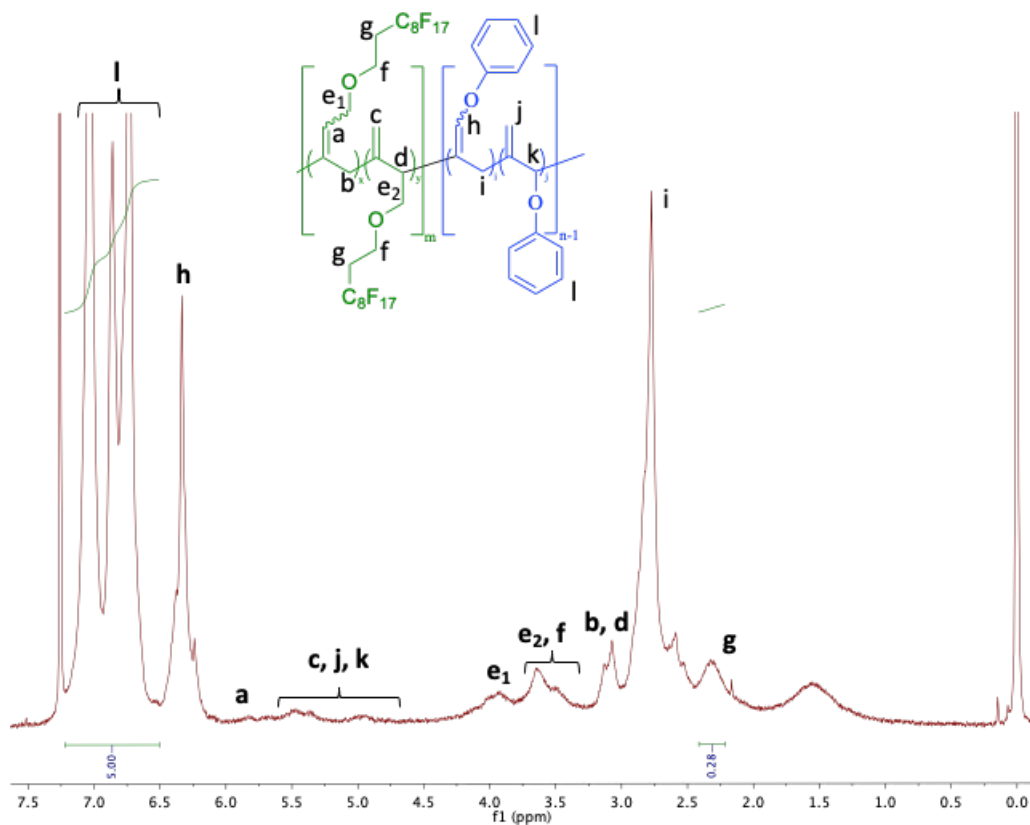


Fig. S13 ^1H NMR spectrum of P2 (400 MHz, in CDCl_3).

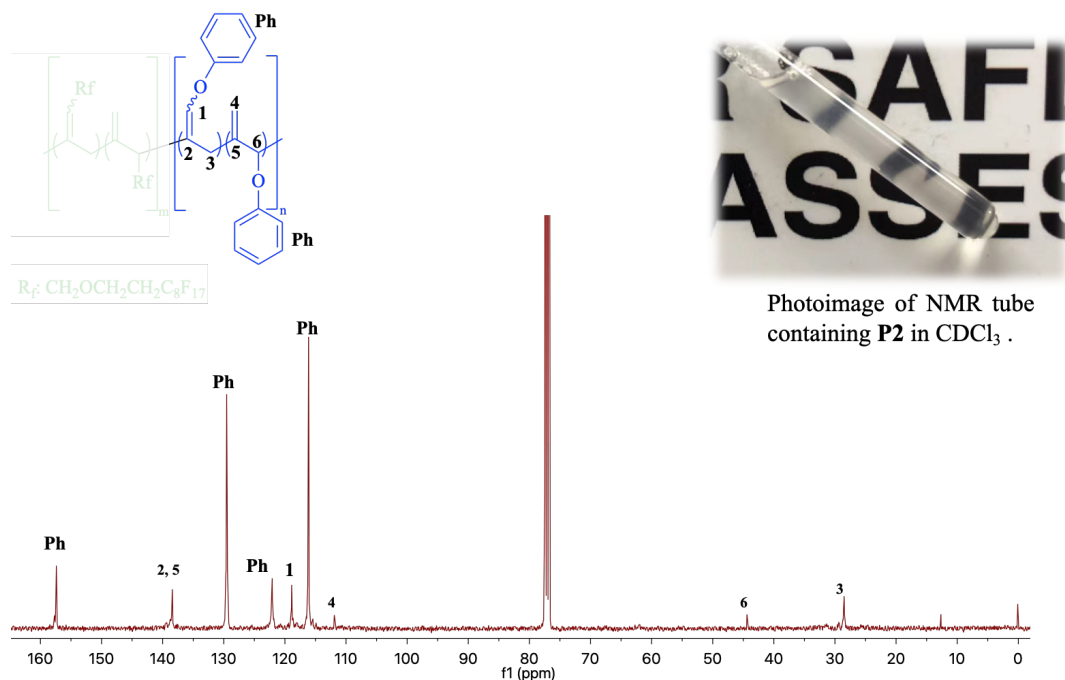


Fig. S14 ^{13}C NMR spectrum of P2 (100MHz, in CDCl_3). The inserted photoimage shows the turbid situation of P2 in CDCl_3 in the NMR tube.

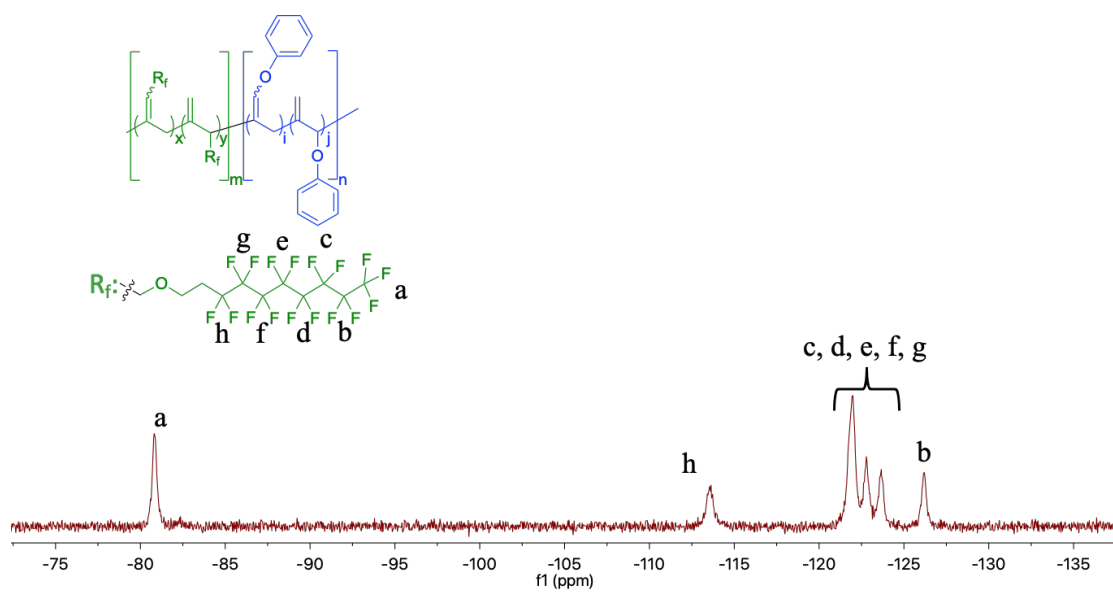


Fig. S15 ^{19}F NMR spectrum of **P2** (376 MHz, in CDCl_3).

2. IR Spectra

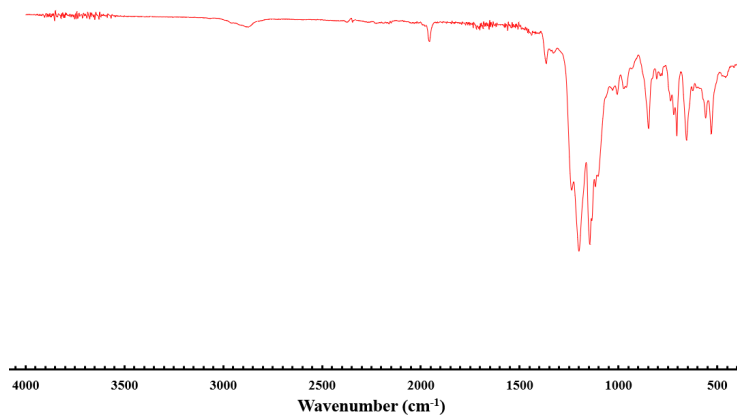


Fig. S16 FT-IR spectrum of 1.

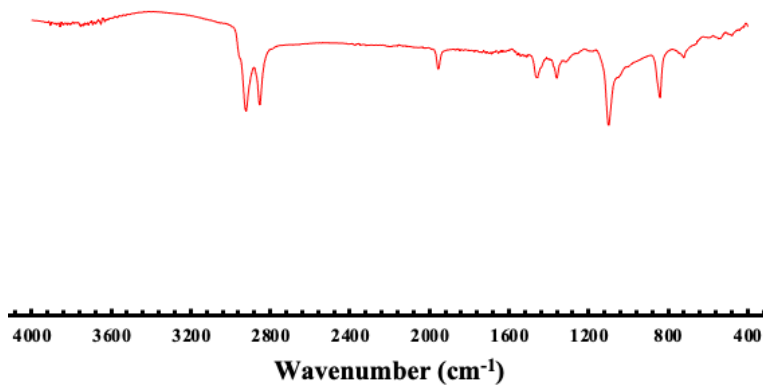


Fig. S17 FT-IR spectrum of 3.

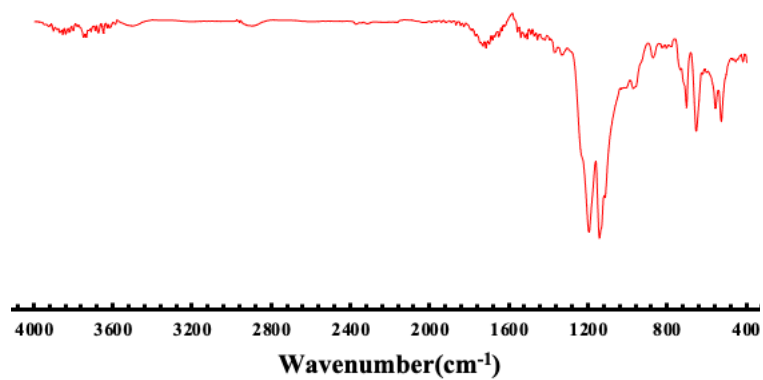


Fig. S18 FT-IR spectrum of poly(1) prepared in hexafluorobenzene.

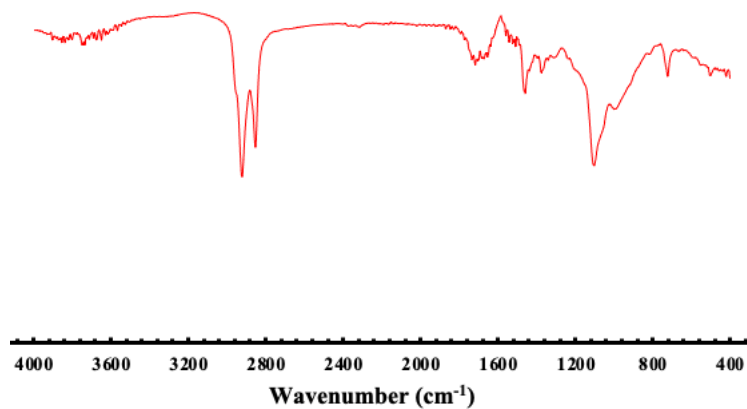


Fig. S19 FT-IR spectrum of poly(3) prepared in hexafluorobenzene.

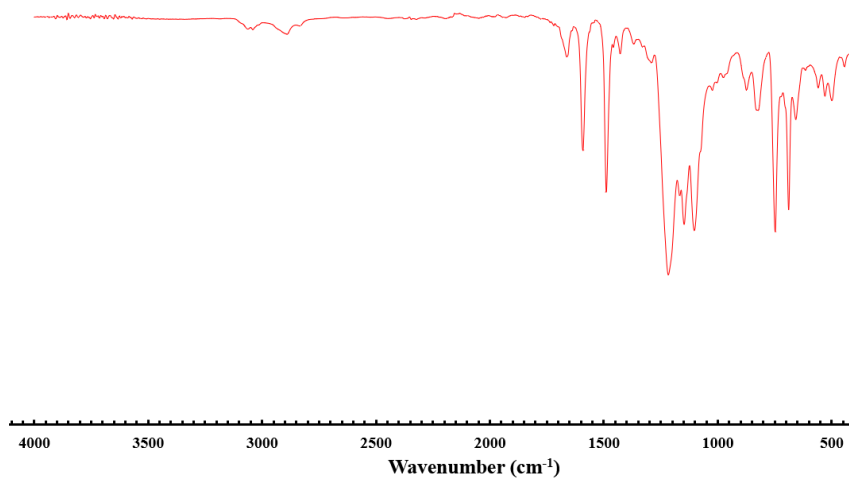


Fig. S20 FT-IR spectrum of P2.

3. FE-SEM Image

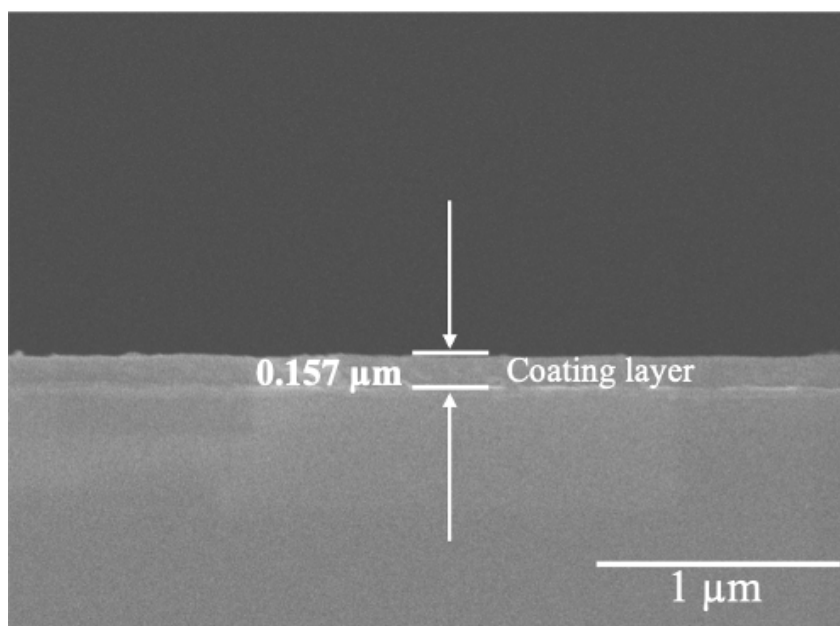


Fig. S21 FE-SEM cross-sectional image of **P3-5**.

4. Surface Wettability Experiments

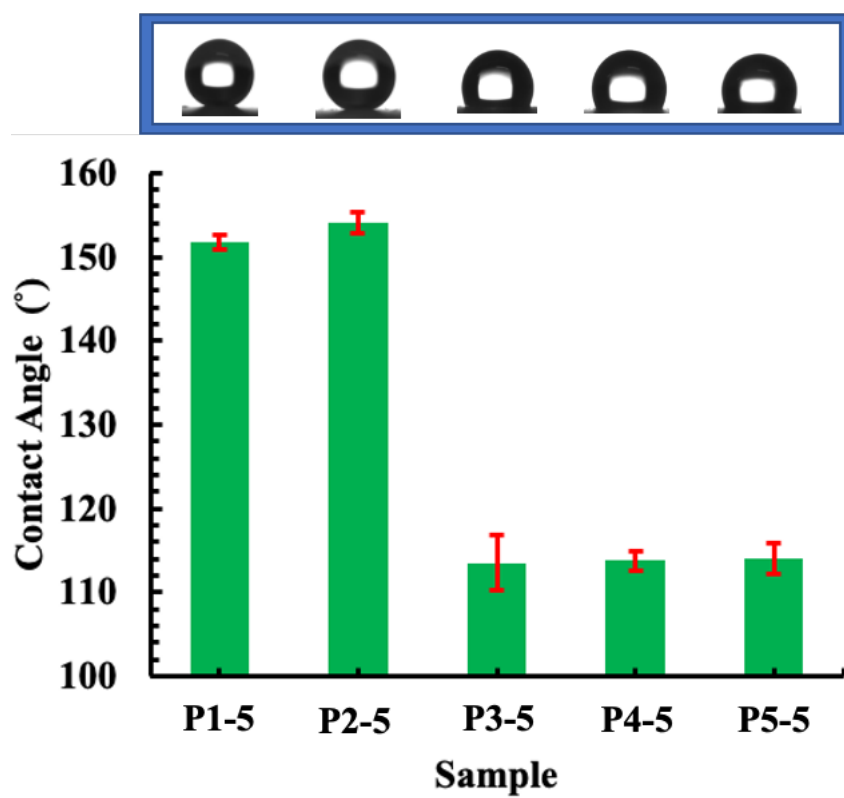


Fig. S22 Static contact angles of water on P1-5, P2-5, P3-5, P4-5, and P5-5 prepared by the dip-coating of the glass substrate with block copolymers (P1, P2, P3, P4, and P5) (Inserted images are photos of water droplets on the coated glass substrates).

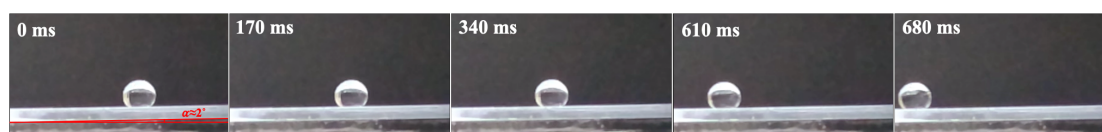


Fig. S23 Time-lapse frames of water droplets (15 μ L) rolling off on an inclined surface of P2-5.

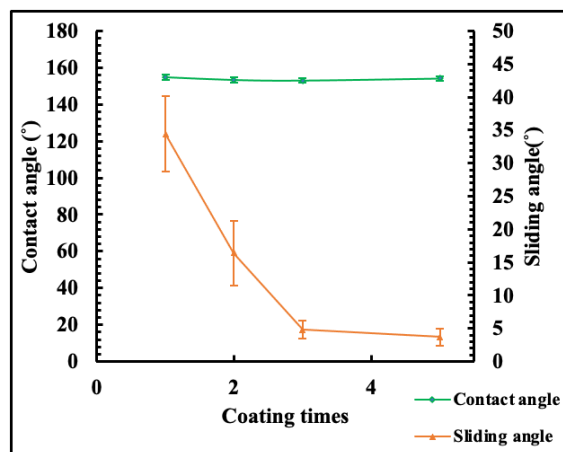


Fig. S24 Static contact angles and sliding angles of water as a function of coating times of the glass substrates with block copolymer (P2).