

Supporting information to

Facile Production of Nanoaggregates with Tuneable Morphologies

From Thermoresponsive P(DEGMA-co-HPMA)

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Table S1. ¹H NMR and SEC data for the RAFT-mediated emulsion polymerization of styrene in water at 70 °C using AIBN as initiator and A3 as a macro-CTA. The molar ratio of [styrene]:[macro-CTA]:[I] was 50:10:1.

Time (min)	¹ H NMR		SEC ^c	
	Conversion ^a (%)	M _{n,theory} ^b (g mol ⁻¹)	Mn (g mol ⁻¹)	<i>D</i>
0	0	8,800	8,800	1.16
30	5	9,060	8,900	1.16
60	20	9,840	9,900	1.14
120	48	11,296	11,200	1.16
180	83	13,116	13,200	1.17
240	95	13,740	13,500	1.21

^a Conversions of styrene were calculated by the integral area of a peak at 5.7 ppm (*I*_{5.7}) and a peak in the range 6.3-7.5 (*I*_{6.3-7.5}) using the following equation: Conversion of styrene = 100 x 5 x *I*_{5.7} / *I*_{6.3-7.5}. ^b M_{n,theory} were calculated using the following equation: M_{n,theory} = Conversion / 100 x 50 x 104 + 8,800. ^c SEC data measured in DMAc + 0.03 wt% of LiBr solution and using PSTY standards for calibration.

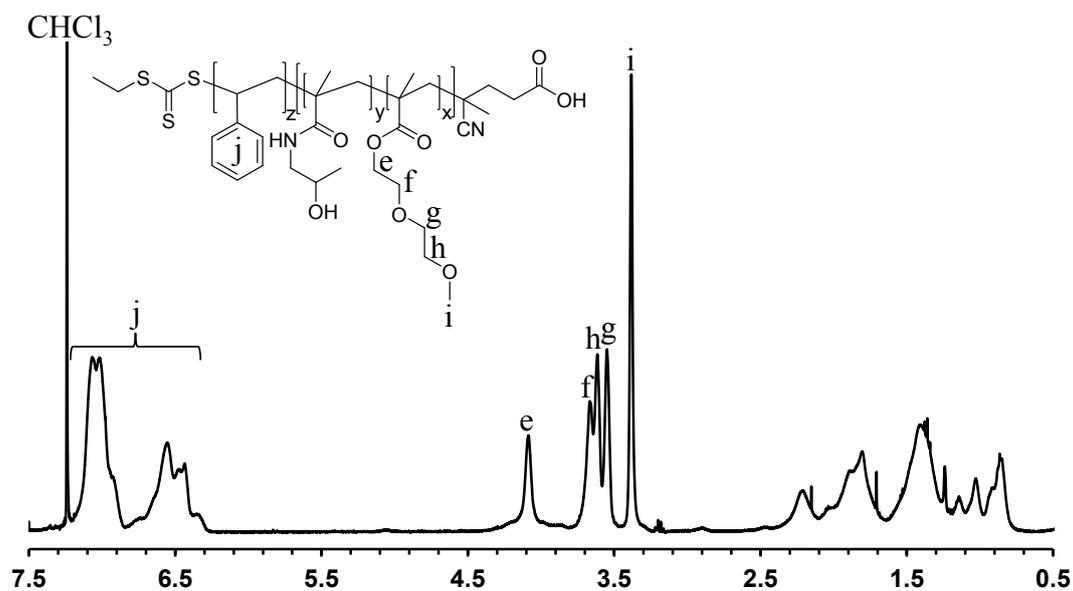


Figure S1. ^1H NMR spectrum of diblock copolymer B3 in CDCl_3 .

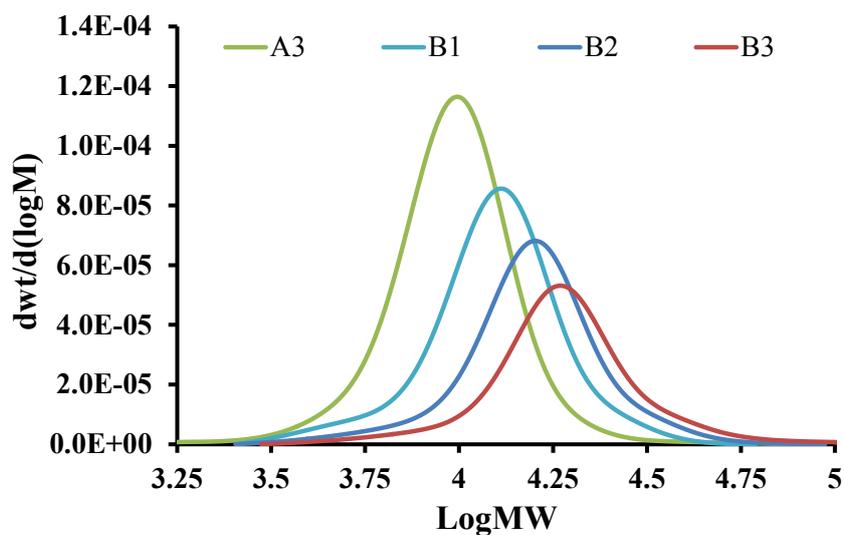


Figure S2. MWDs of macro-CTA A3 and diblock copolymers (B1-B3) synthesized by RAFT-mediated emulsion polymerization of styrene in water at $70\text{ }^\circ\text{C}$ using AIBN as initiator. The area under each curve was normalized.

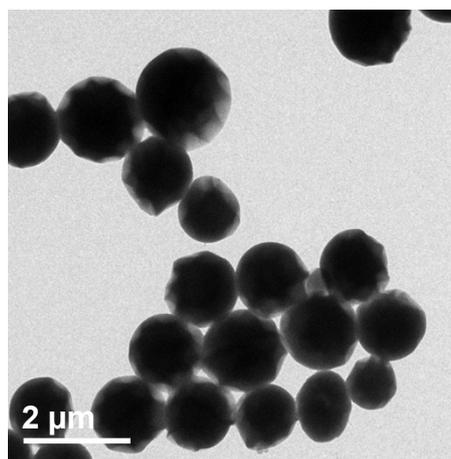


Figure S3. Representative TEM images of the latex of diblock copolymer B2 in water at 70 ° C after 4 h of polymerization.

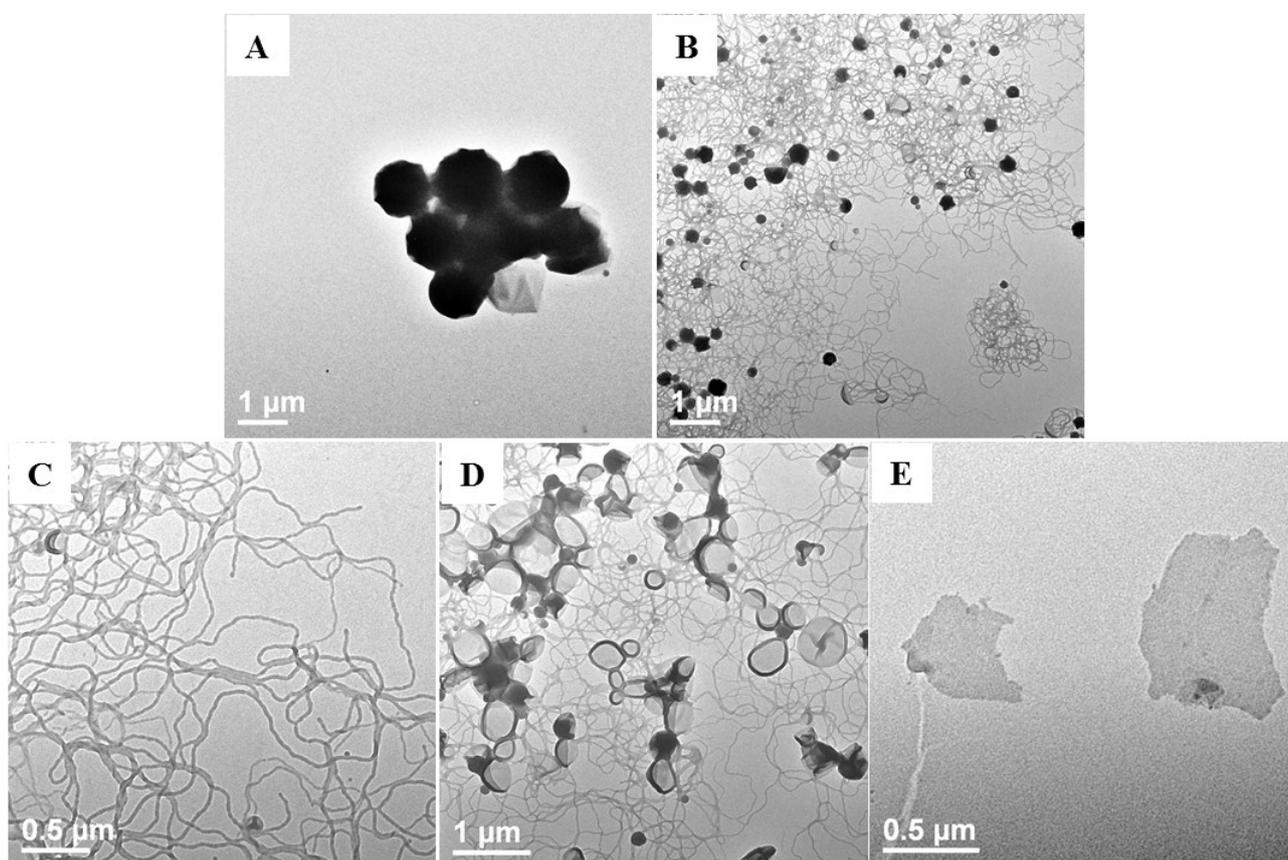


Figure S4. Representative TEM images of the latex of diblock copolymer B1 in water after 3.5 h of polymerization, after adding different amounts of toluene (A) 0 $\mu\text{L/mL}$, (B) 20 $\mu\text{L/mL}$, (C) 40 $\mu\text{L/mL}$, (D) 80 $\mu\text{L/mL}$, (E) 160 $\mu\text{L/mL}$, and then cooling to room temperature (23 °C) for 24 h.

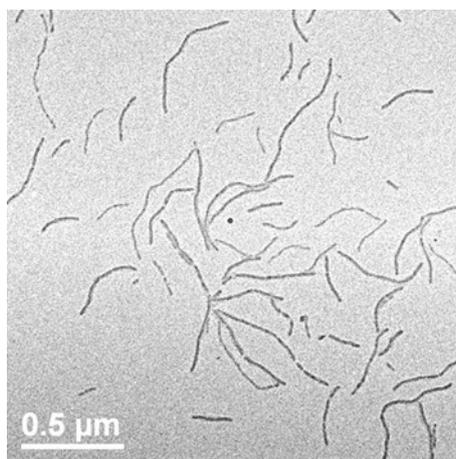


Figure S5. Representative TEM images of the latex of B2 after addition of toluene (20 μL/mL) and cutting by application of ultrasound.

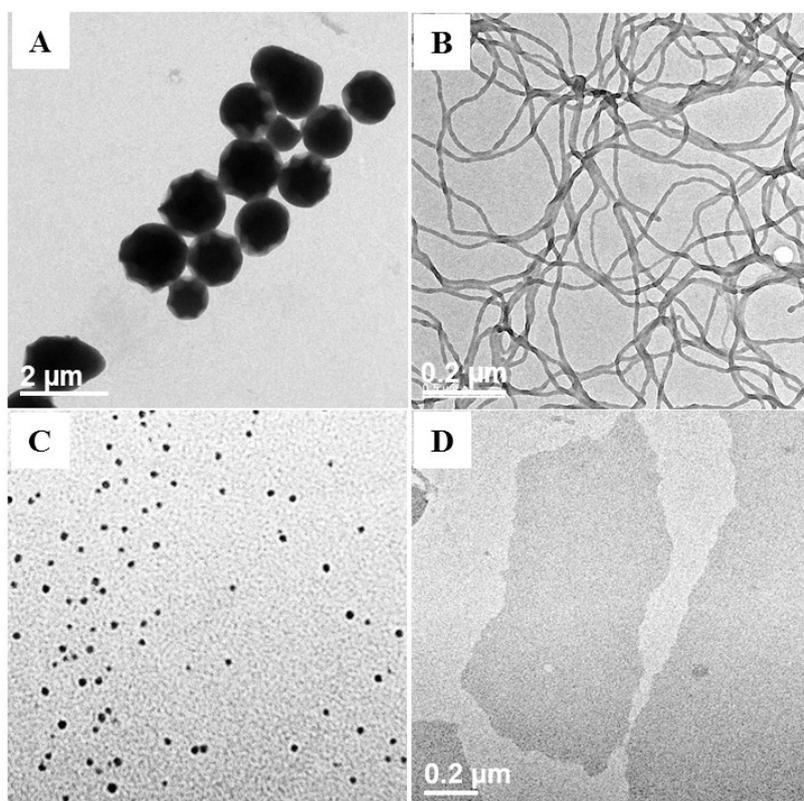


Figure S6. Representative TEM images of the latex particles after dialysis against water. The initial latices before dialysis were (A) B2, (B) B2 after addition of toluene (20 μL/mL), (C) B3 after addition of toluene (20 μL/mL), and (D) B1 after addition of toluene (160 μL/mL).

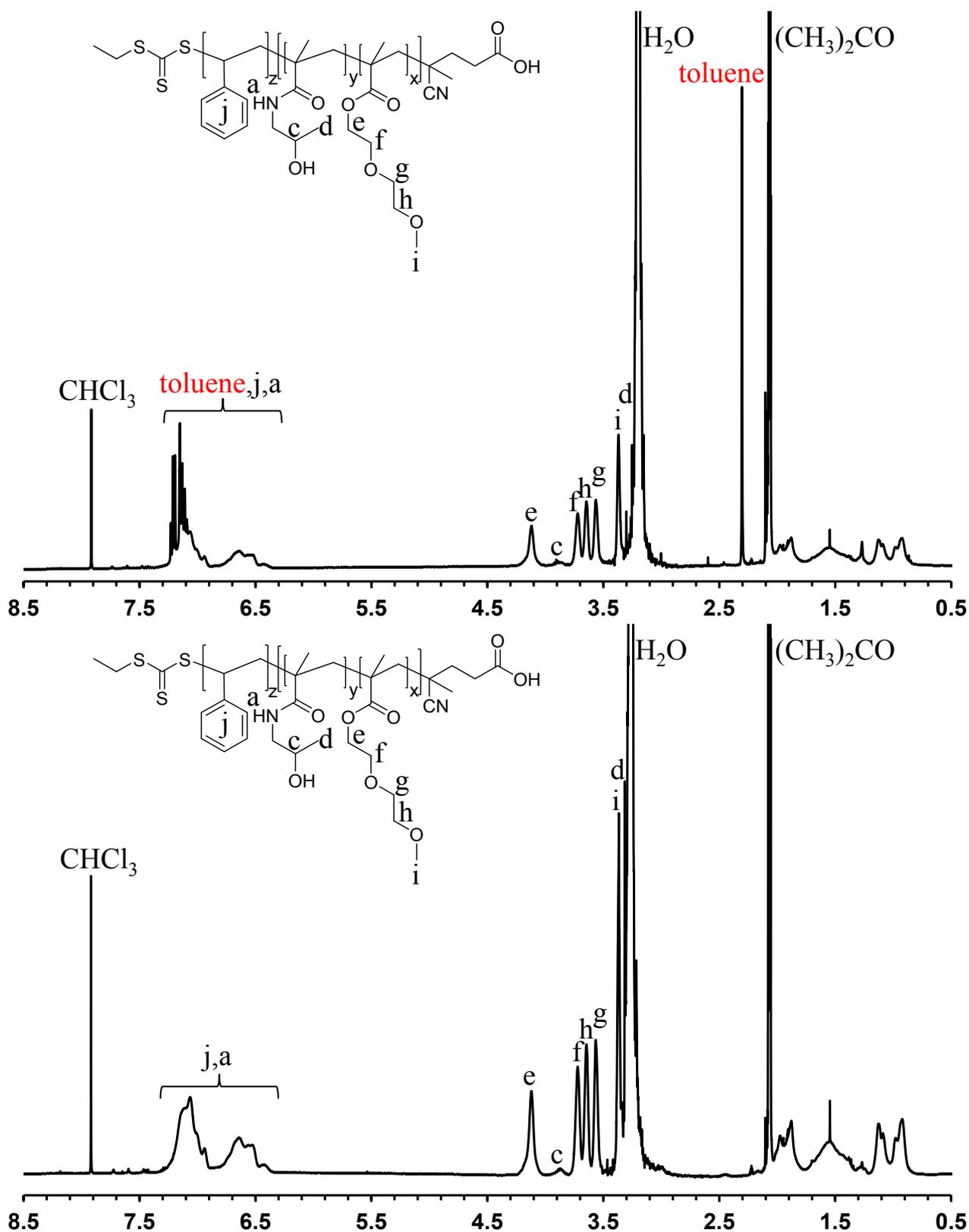


Figure S7. ^1H NMR spectrum for latex of B2 with toluene (20 $\mu\text{L}/\text{mL}$) (A) before and (B) after dialysis. Spectra recorded in CDCl_3 and acetone- d_6 (1:4) mixture.

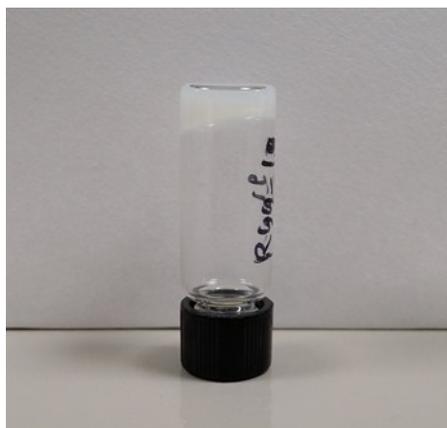


Figure S8. Digital photograph recorded for the latex of B2 after adding toluene (20 $\mu\text{L}/\text{mL}$), dialysing against water and heating to 50 $^{\circ}\text{C}$ for 1 min.

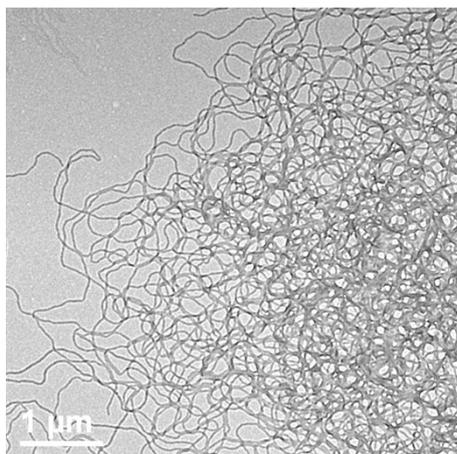


Figure S9. Representative TEM images of the latex of diblock copolymer B2 with toluene (20 $\mu\text{L}/\text{mL}$) after dialysis and heated at 50 for 1 min.