

Supporting Information

Photo-Controlled Polymerization-Induced Self-Assembly and Reorganization Process for Fabrication of Polymeric Nanomaterials

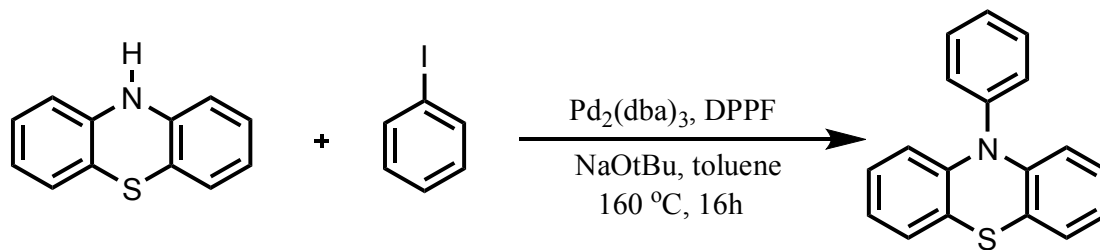
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Scheme S1. Synthesis of PTH.

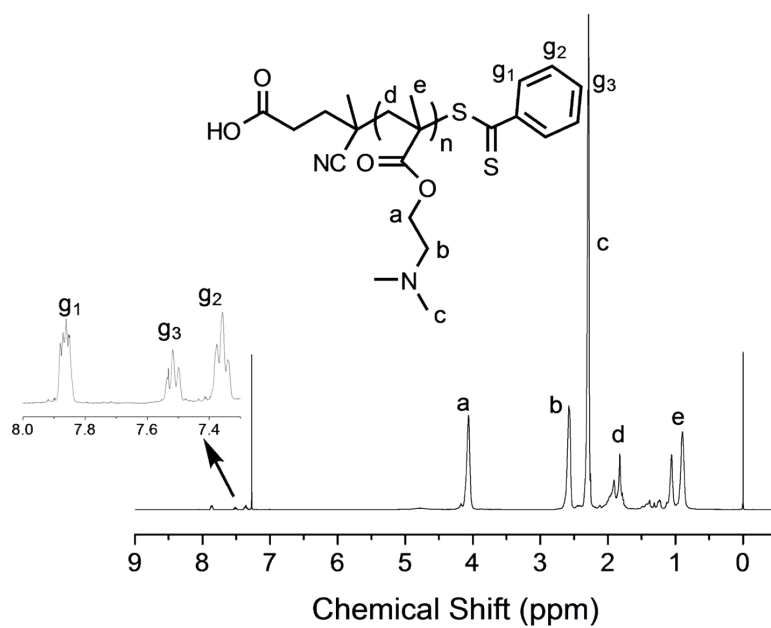


Figure S1. ¹H NMR spectrum of PDMAEMA-CPADB in CDCl₃.

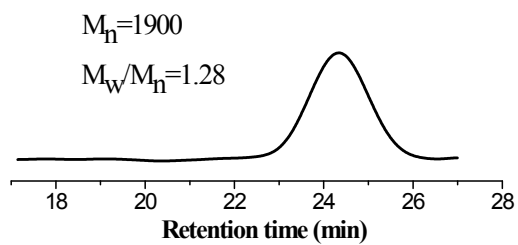


Figure S2. GPC trace of PDMAEMA-CPADB.

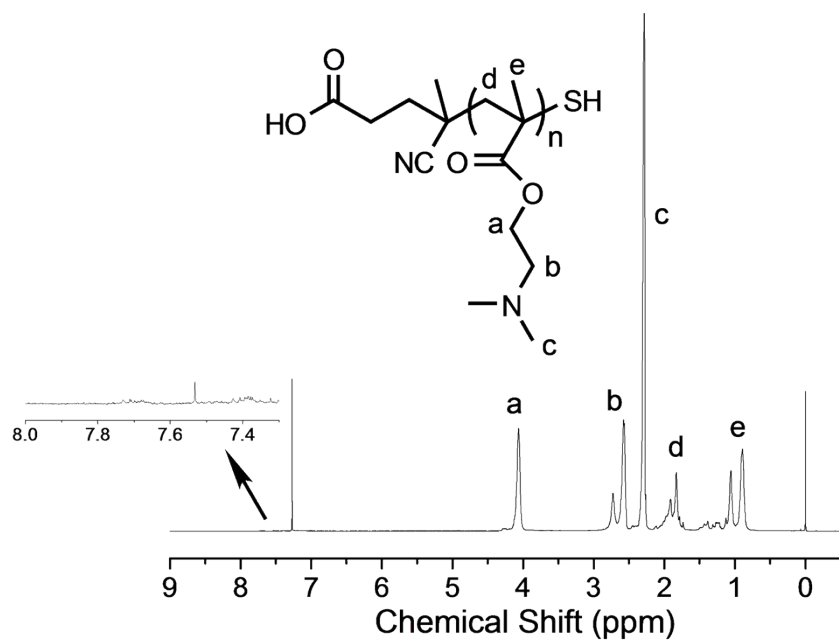


Figure S3. ¹H NMR spectrum of PDMAEMA-SH in CDCl₃.

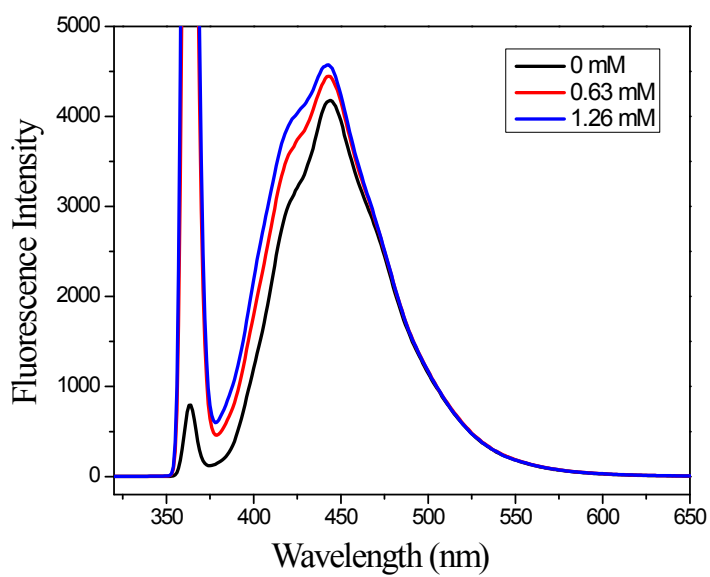


Figure S4. Fluorescence quenching study of solutions of PTH (0.669 mM) in ethanol with varying concentrations of PDMAEMA-SH.

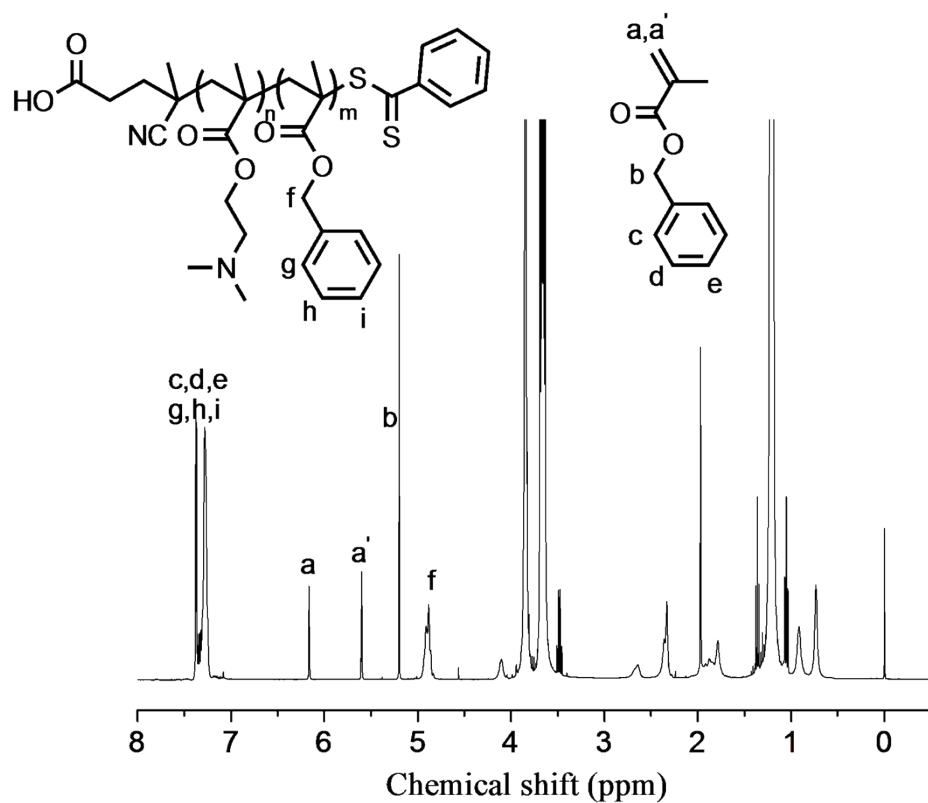


Figure S5. Typical ^1H NMR spectrum of the PET-RAFT dispersion polymerization system of BzMA with PTH photoredox catalyst using PDMEAEM-CPADB as macro-CTA in CDCl_3 .

$$\text{conversion}_{\text{BzMA}} = \frac{I_{4.87}}{I_{4.87} + I_{5.20}} \times 100\% \quad (\text{S1})$$

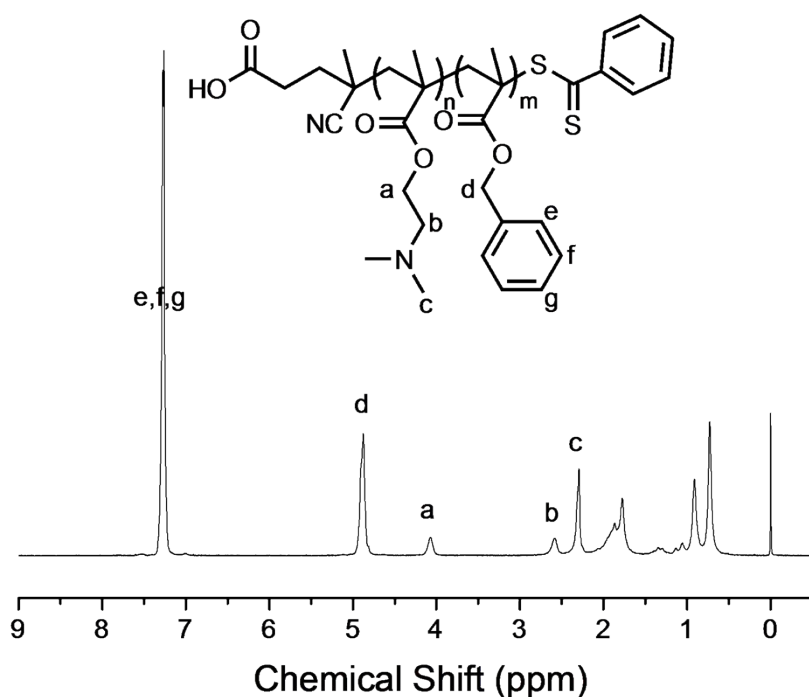


Figure S6. ^1H NMR spectrum of PDMAEMA-*b*-PBzMA diblock copolymers synthesized using molar ratio of [PTH]/[PDMAEMA]=1/2.

Table S1. Characterization of PDMAEMA-*b*-PBzMA diblock copolymers synthesized with different polymerization times.

Sample	Polymerization time (h)	Conv. ^a (%)	M_n^b	M_w/M_n^b
1	2.3	5.2	2300	1.09
2	5.3	11.9	4300	1.08
3	7.5	19.0	6700	1.04
4	10	29.6	10100	1.03
5	12.5	39.4	13500	1.03
6	15.2	51.3	17200	1.02
7	17.5	61.8	21300	1.04
8	20	69.5	24000	1.04
9	22.5	80.2	27000	1.05
10	25	86.5	31900	1.05
11	28	89.4	32000	1.06
12	33	91.5	32300	1.06

^aThe results were calculated based on ^1H NMR spectra in CDCl_3 . ^b The molecular weight and molecular weight distribution of di-block copolymers were determined by GPC measurements. The polymerization was conducted in ethanol with a molar ratio of [BzMA]/[PDMAEMA]/[PTH] = 1000/5/1 at 15% solids concentration.