Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

Effects of the Photo-induced Proton Generation on the Assembly Formation of Dual-Temperature and pH Responsive Block Copolymers

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FIGURE LEGENDS

Scheme S1. Synthesis of (A) P(NIPAAm-co-CIPAAm) (macro-CTA) and (B) P(NIPAAm-co-CIPAAm)-b-P(NIPAAm-co-BMAAm) by RAFT polymerization.

Figure S1. ^{1}H NMR spectra of P(NIPAAm-*co*-CIPAAm) in DMSO-d_6 at room temperature.

Figure S2. (A) Transmittance change of 0.1 w/v% aqueous solution of Red line: P($NIPAAm_{88}$-*co*-$CIPAAm_5$), Blue line: P($NIPAAm_{85}$-*co*-$CIPAAm_7$), Green line: P($NIPAAm_{59}$-*co*-$CIPAAm_{15}$) at (A) pH 2 and (B) 12 as a function of temperature.

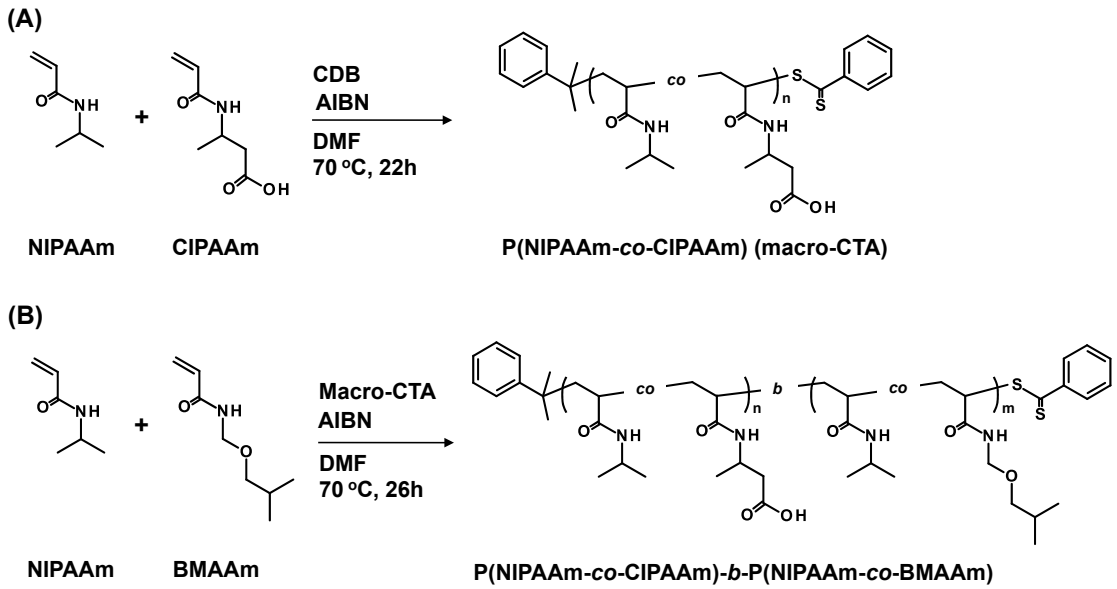
Figure S3. PH change of micelle solutions (P($NIPAAm_{88}$-*co*-$CIPAAm_5$)-*b*-P($NIPAAm_{58}$-*co*-$BMAAm_7$)) (○) NBA loaded micelle, (△) mixture solution of micelle and NBA, and (□) adding 1mM HCl to micelle solution.

Figure S4. Absorbance of micelle of P($NIPAAm_{88}$-*co*-$CIPAAm_5$)-*b*-P($NIPAAm_{58}$-*co*-$BMAAm_7$) and NBA suspension by UV irradiation.

Figure S5. Transmittance change of 0.1 w/v% aqueous solution of P($NIPAAm_{59}$-*co*-$CIPAAm_{15}$)-*b*-P($NIPAAm_{43}$-*co*-$BMAAm_{10}$) at pH 2 and 12 as a function of temperature.

Figure S6. Transmittance change of 0.1 w/v% aqueous solution of P($NIPAAm_{88}$-*co*-$CIPAAm_5$)-*b*-P($NIPAAm_{58}$-*co*-$BMAAm_7$) at various pH solutions as a function of temperature.

Figure S7. Size distribution histogram for P($NIPAAm_{59}$-*co*-$CIPAAm_{15}$)-*b*-P($NIPAAm_{43}$-*co*-$BMAAm_{10}$) at 25 °C in pH 12.



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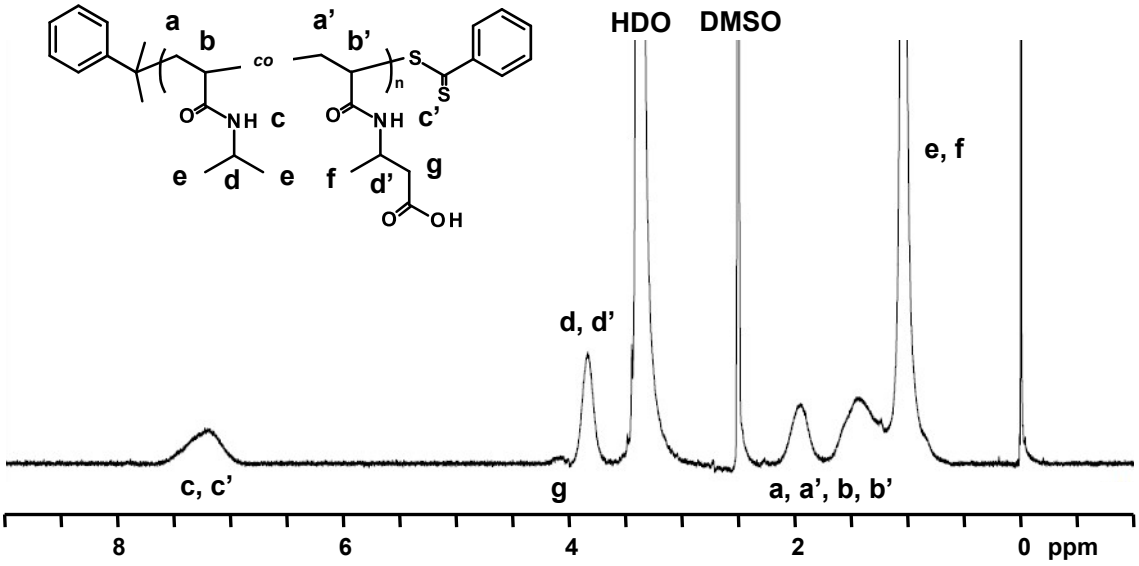

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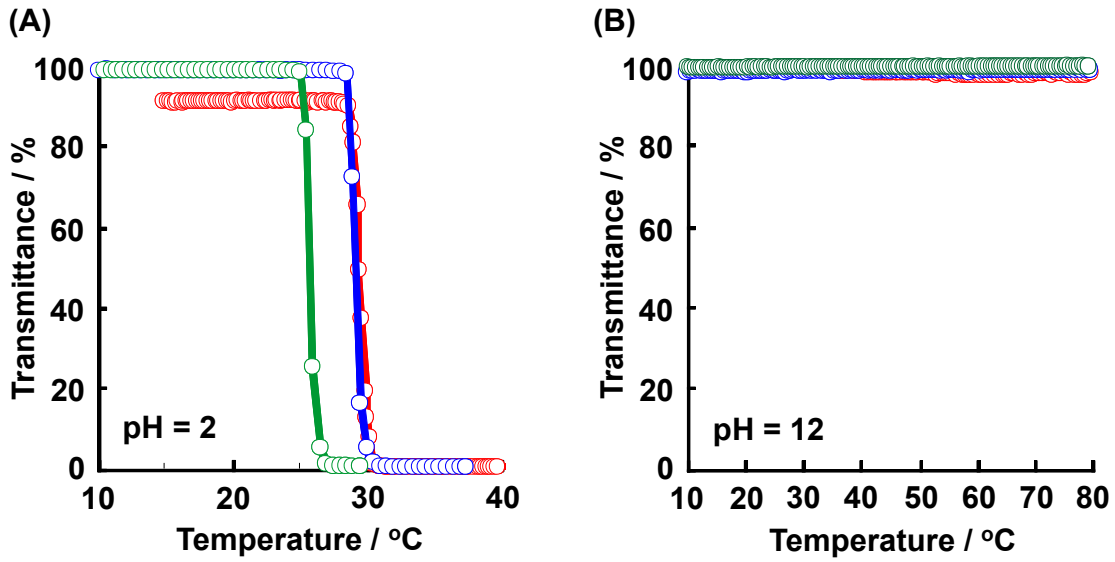

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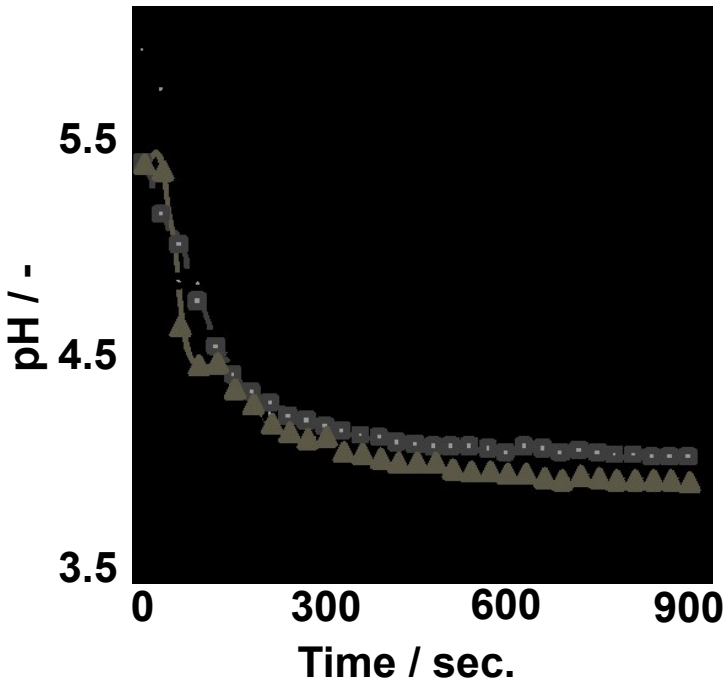

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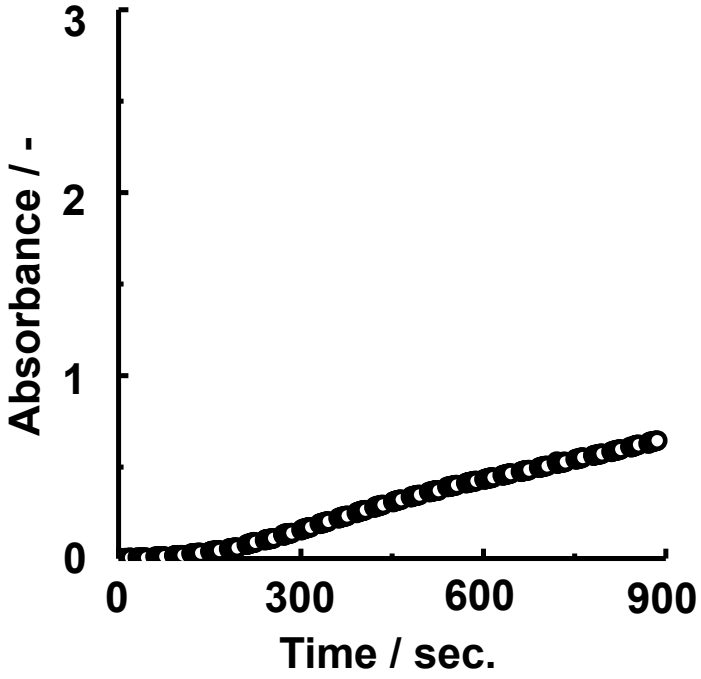

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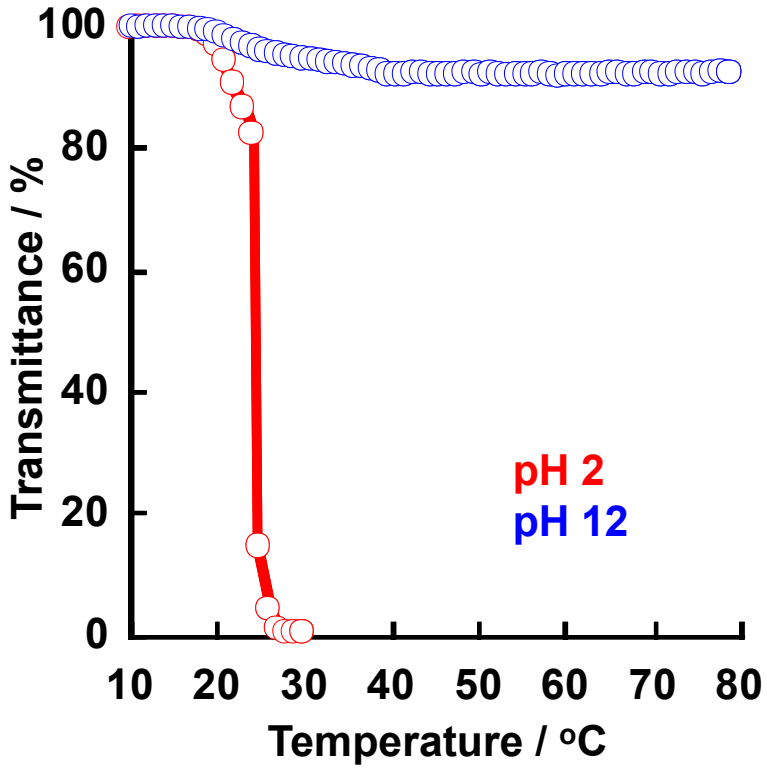
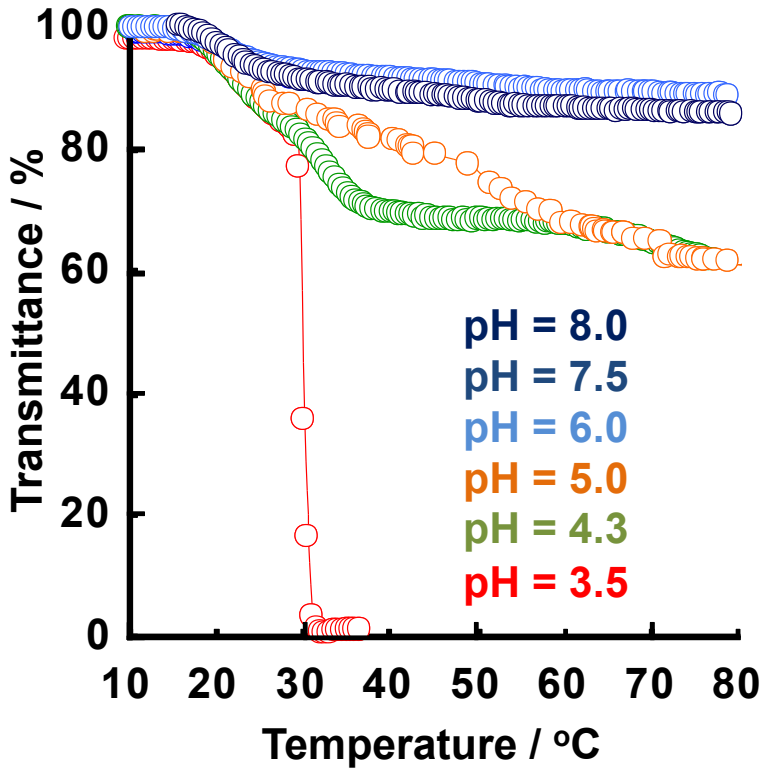


Figure S5. Transmittance change of 0.1 w/v% aqueous solution of P(NIPAAm$_{59}$-*co*-CIPAAm$_{15}$)-*b*-P(NIPAAm$_{43}$-*co*-BMAAm$_{10}$) at pH 2 and 12 as a function of temperature.



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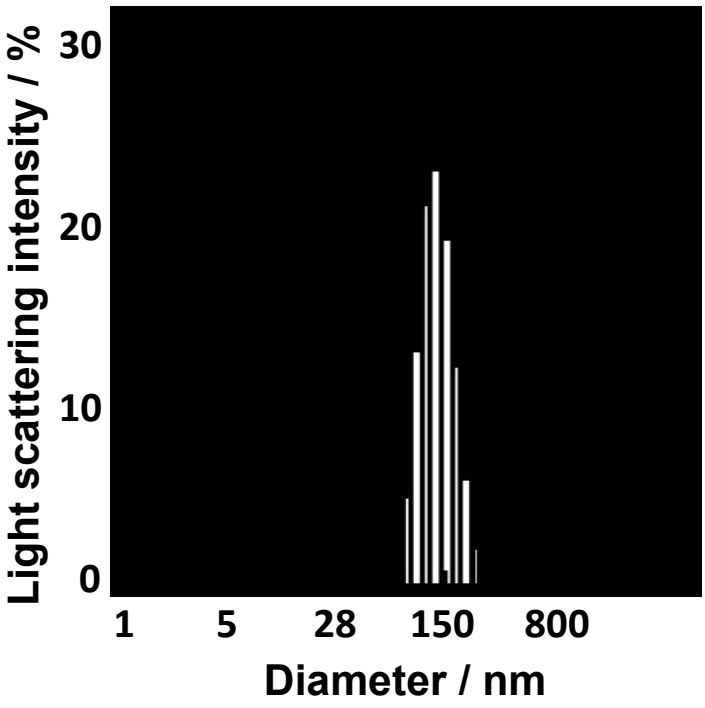

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