Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

CO_2-Responsive Fluorescent Hyperbranched Poly(ether amine)s

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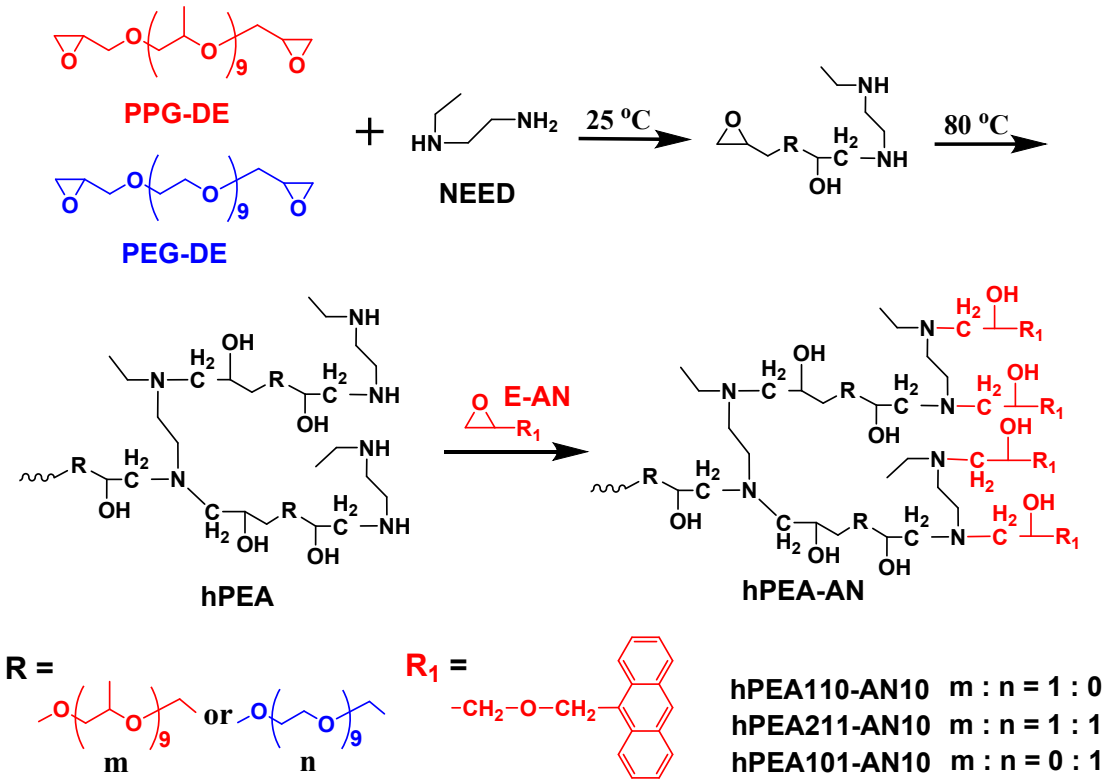

Figure S1. The synthesis process of hPEA-AN

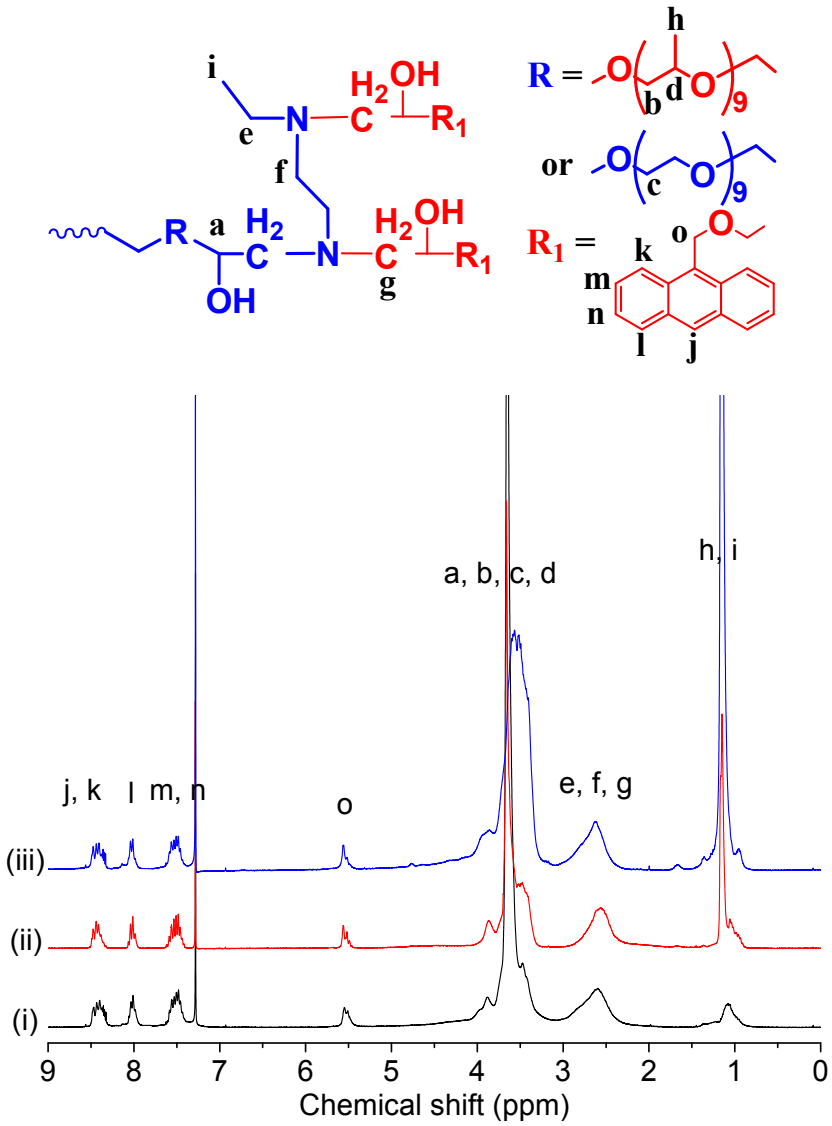

Figure S2. ^{1}H NMR spectra of (i) hPEA101-AN10, (ii) hPEA211-AN10, and (iii) hPEA110-AN10 in $CDCl_3$

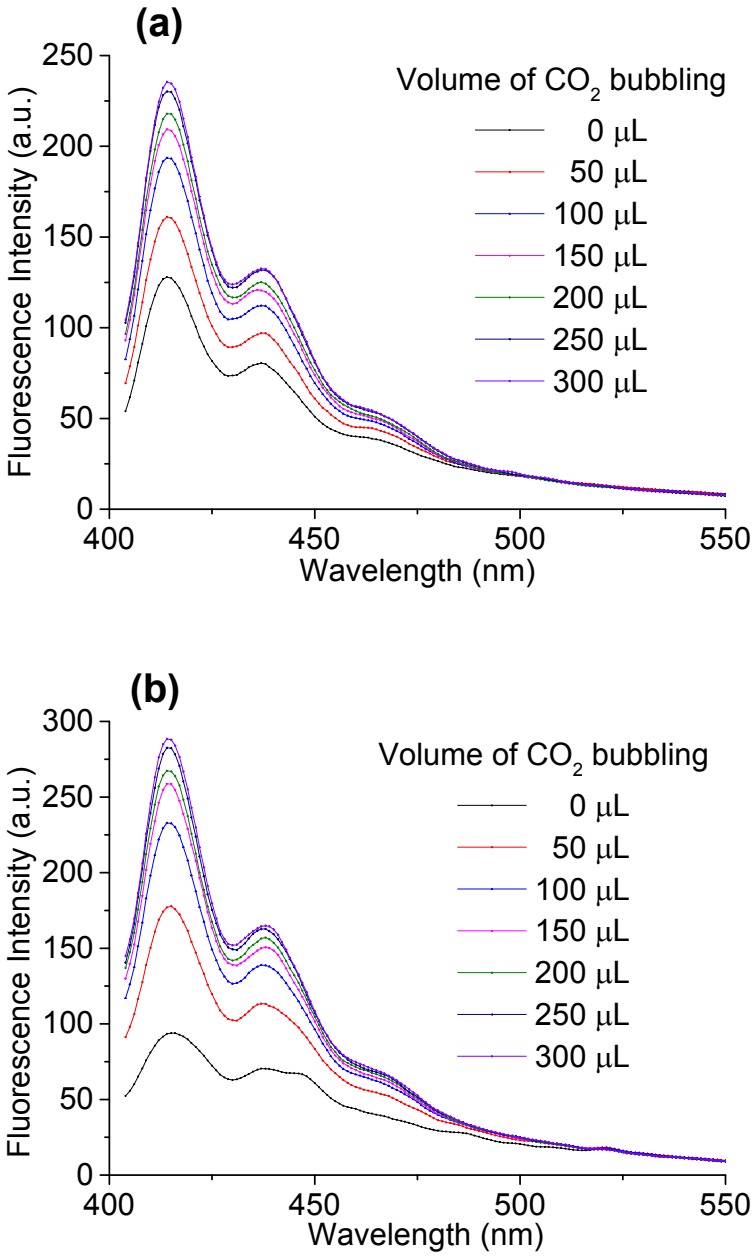

Figure S3. (a) The fluorescence emission spectra of 1 mg/mL hPEA101-AN10 aqueous solution with different amounts of CO_2 bubbling. (b) The fluorescence emission spectra of 1 mg/mL hPEA110-AN10 aqueous solution with different amounts of CO_2 bubbling.

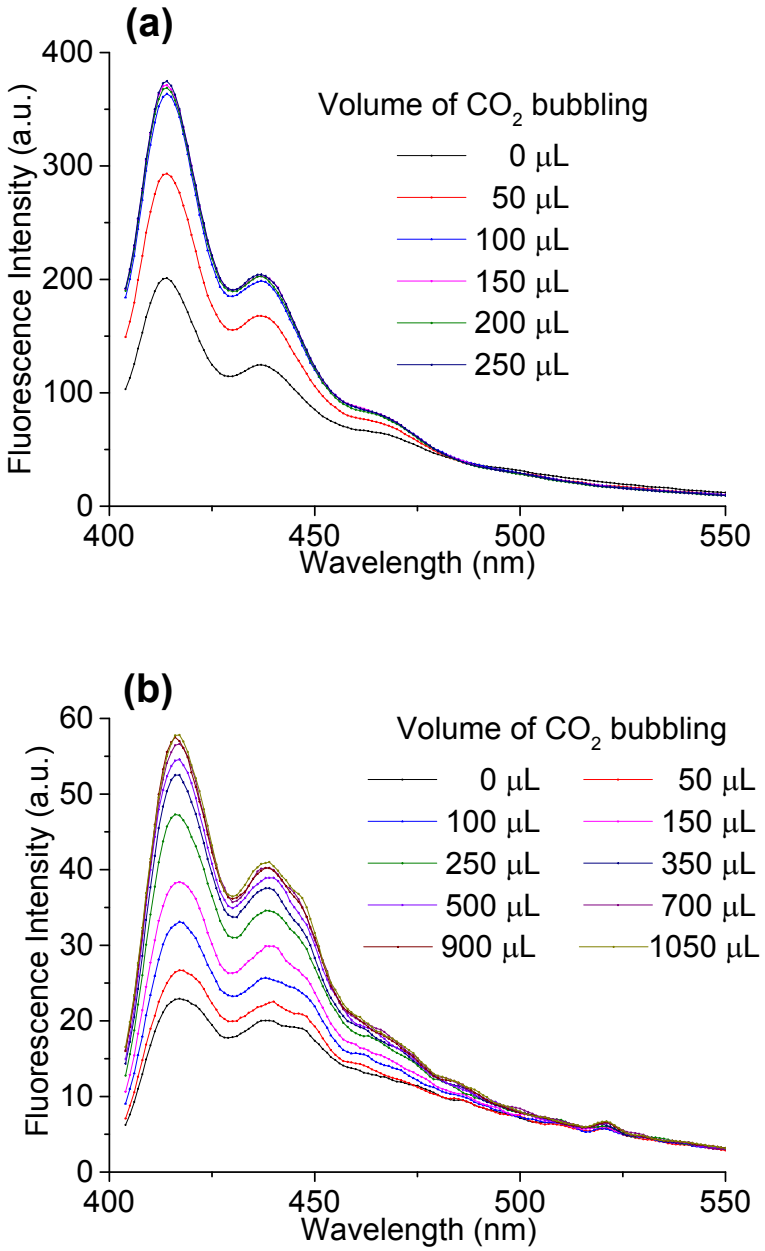

Figure S4. (a) The fluorescence emission spectra of 0.5 mg/mL hPEA211-AN10 aqueous solution with different amounts of CO_2 bubbling. (b) The fluorescence emission spectra of 3 mg/mL hPEA211-AN10 aqueous solution with different amounts of CO_2 bubbling.

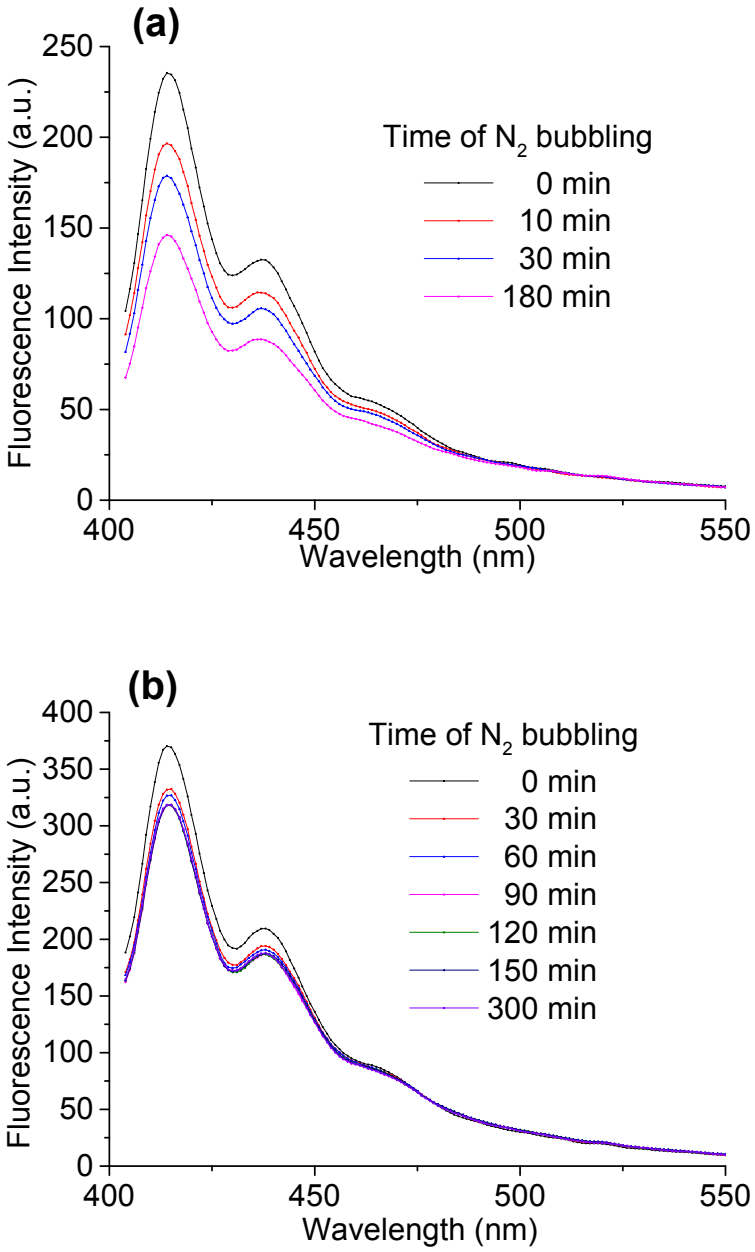

Figure S5. (a) The fluorescence emission spectra of 1 mg/mL hPEA101-AN10 aqueous solution with different time of N_2 bubbling. (b) The fluorescence emission spectra of 1 mg/mL hPEA110-AN10 aqueous solution with different time of N_2 bubbling.

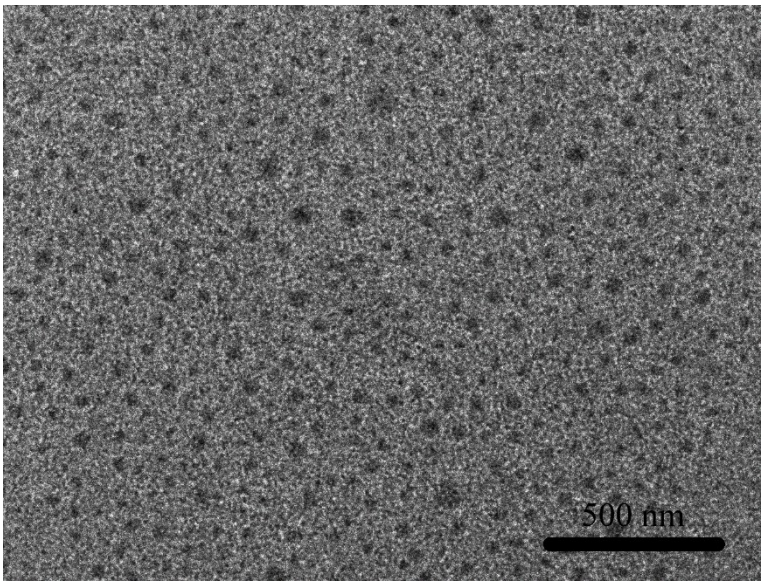

Figure S6. TEM image of hPEA211-AN10 micelles in water.

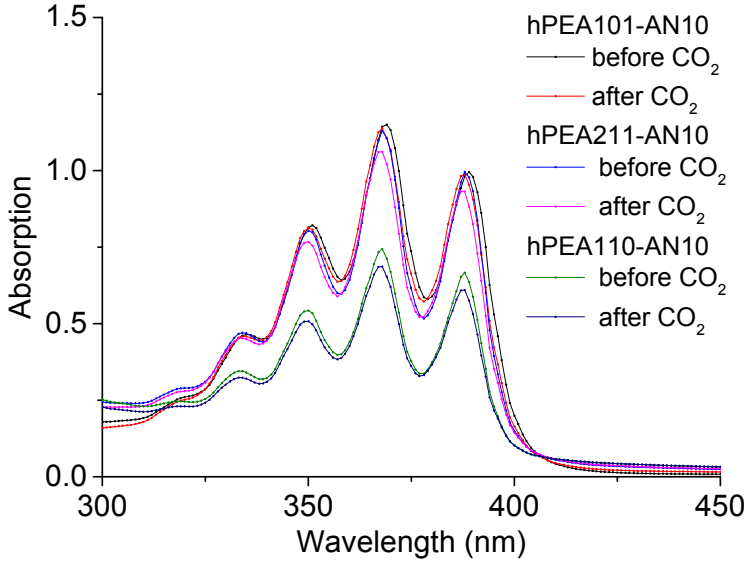

Figure S7. The UV-vis spectra of hPEA-AN aqueous solution before and after CO_2 bubbling at 25 ^oC.

Table S1. Change in pH value after bubbling CO_2 and, subsequently, N_2 through the aqueous solution of 1 mg/mL hPEA-AN with different compositions

pH	hPEA101-AN10	hPEA211-AN10	hPEA110-AN10
Initial state before CO_2 injection	9.16	8.91	8.28
CO_2 injection (400 μL)	5.28	5.11	4.85
N_2 bubbling (90 min, 1000 mL/min)	8.64	8.44	7.48