Electronic Supplementary Material (ESI) for Soft Matter

Supporting Information

Responsive Fluorescent Core-crosslinked Polymer particles Based on the Anthracene-Contained Hyperbranched Poly(ether amine) (hPEA-AN)

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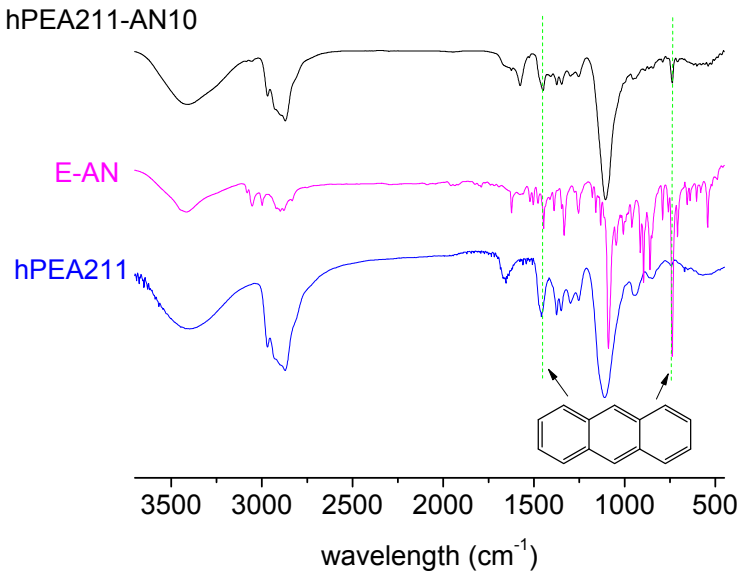

Figure S1. FT-IR spectra of hPEA211, E-AN, and hPEA211-AN10

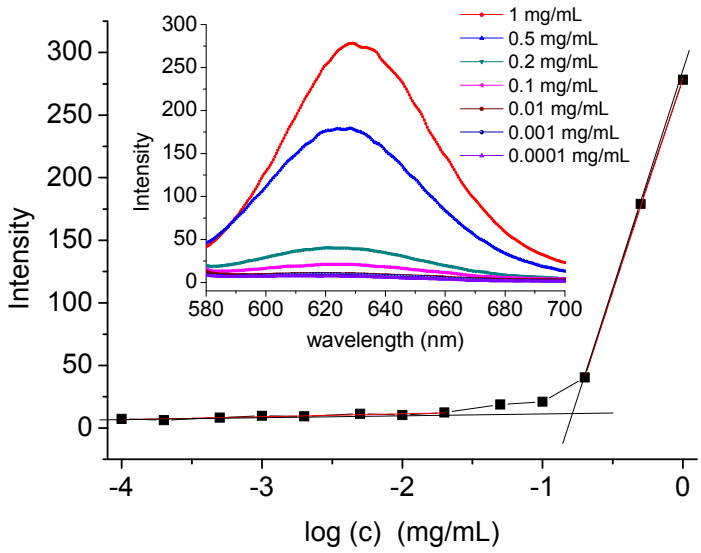

Figure S2. Plot of the maximum fluorescence emission intensity of the Nile Red vs concentration of hPEA211-AN10. Inset: fluorescence emission spectra of Nile Red solution with different hPEA211-AN10 concentration.

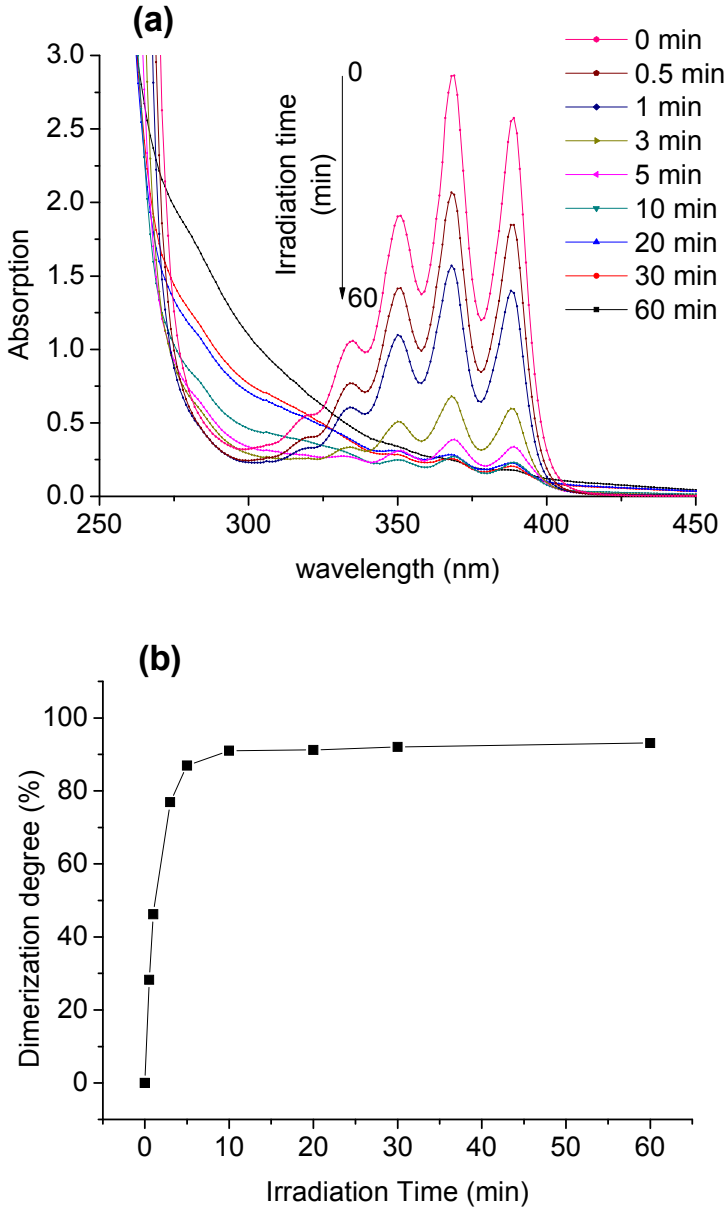

Figure S3. (a) Dependence of UV-vis spectra of hPEA211-AN10 particles aqueous solution (1 mg/mL) on UV irradiation (365 nm) time. (b) Increase of dimerization degree of hPEA211-AN10 particles aqueous solution (1 mg/mL) during the photo-crosslinking vs the irradiation time.

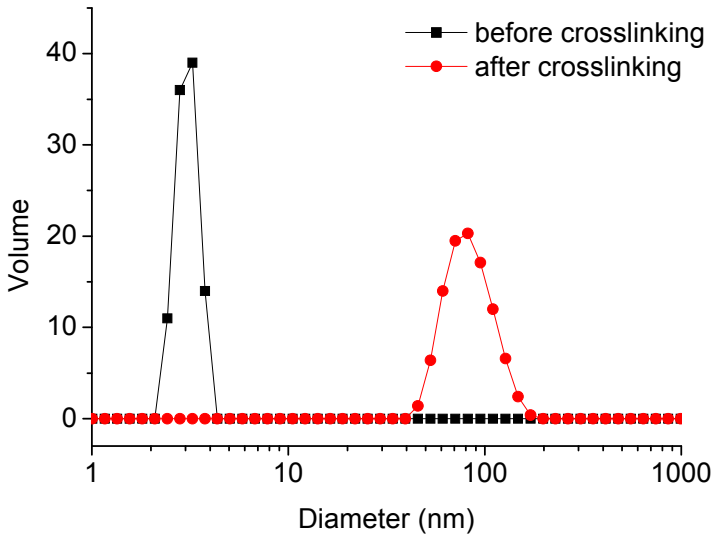

Figure S4. Size distribution of particles formed by hPEA211-AN10 before and after crosslinking determined by DLS at 25 ^{o}C in THF.

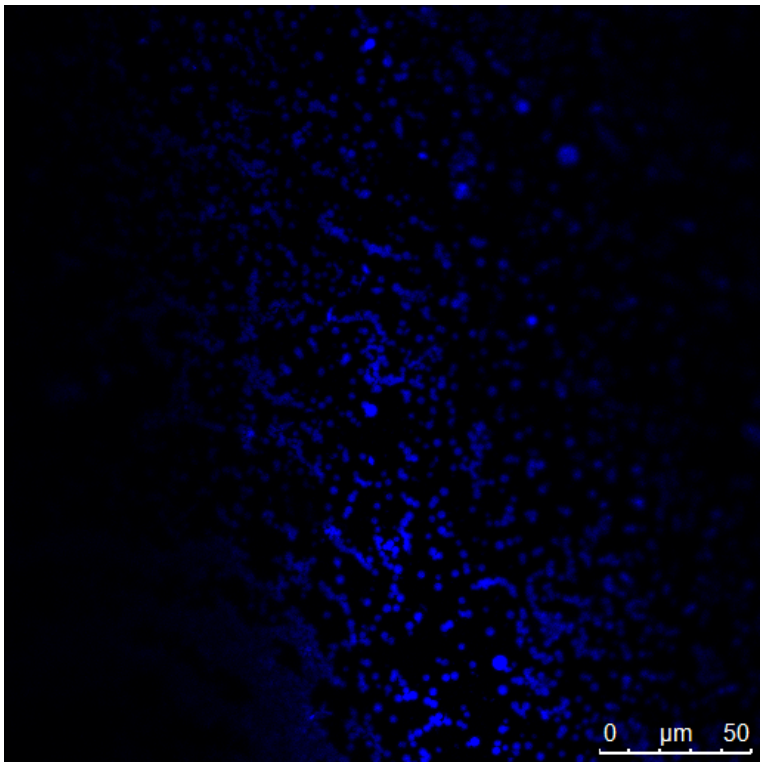

Figure S5. Confocal microscope image of hPEA541-AN particles at room temperature with an excitation wavelength 405 nm The particles were exposed at 365 nm UV-light for 5 min.

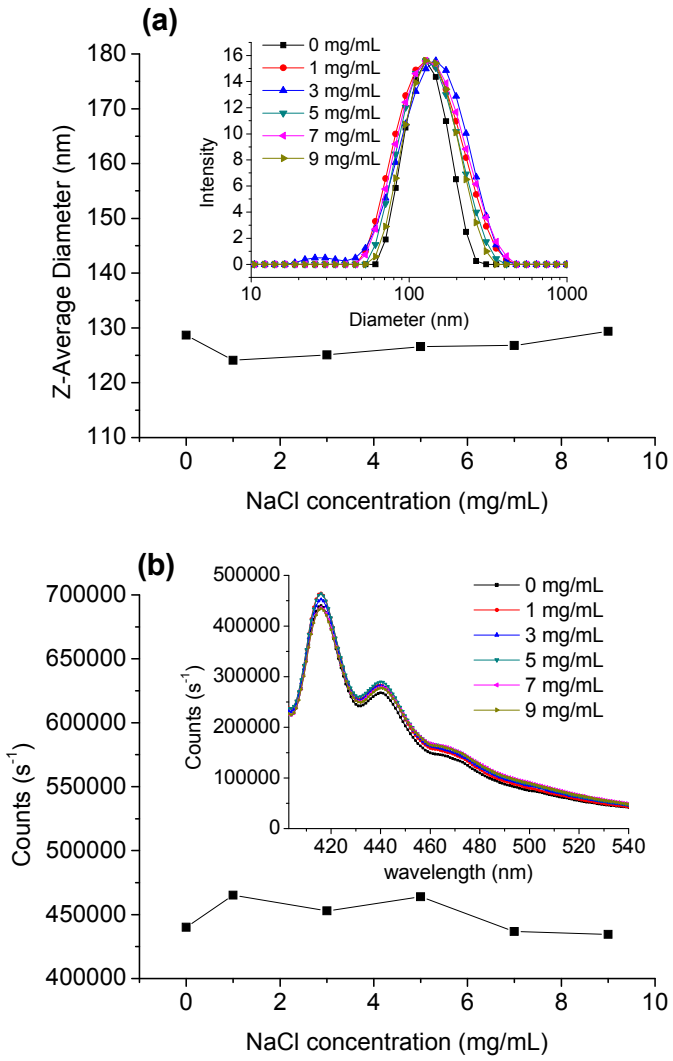

Figure S6. (a) Z-average diameters of particles formed by hPEA211-AN10, with different NaCl concentration obtained by DLS. Inset: Size distribution of particles formed by hPEA211-AN10 with different NaCl concentration determined by DLS at 25 ^{o}C in aqueous solution. (b) Plot of the fluorescence emission intensity of hPEA211-AN10 at 416 nm vs NaCl concentration. Inset: Fluorescence emission spectra of hPEA211-AN10 particles solution with different NaCl concentration.

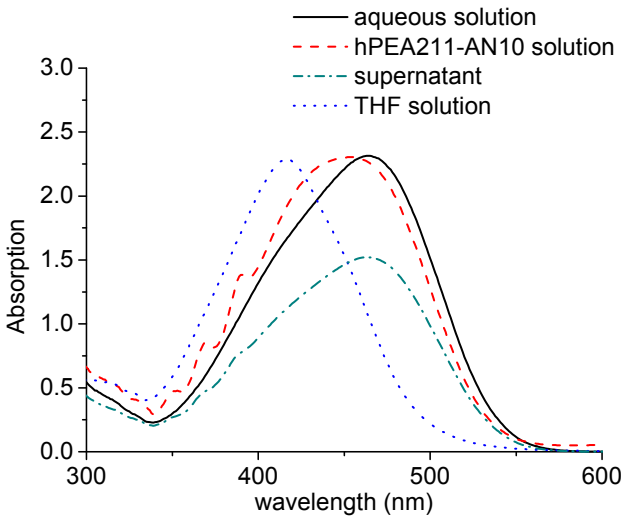

Figure S7. UV-vis spectra of Methyl Orange (MO) solution in encapsulation experiment ($c_{hPEA211\text{-}AN10}$ = 10 mg/mL, c_{dye} = 1 mg/mL). The solution was diluted by 20 times before measurement.

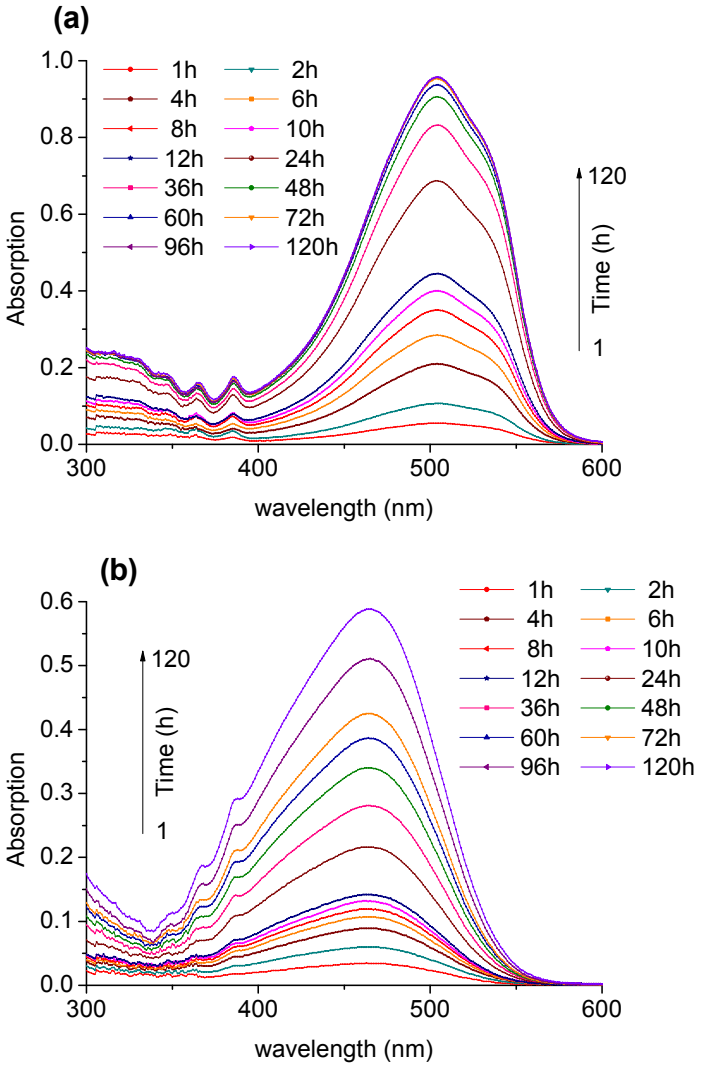

Figure S8. UV-vis spectra of the solution of Methyl Orange released from hPEA211-AN10 particles in (a) pH 3.0 and (b) pH 8.0 citrate buffered aqueous solution within different time.