Supporting Information for

Photolysis of an Amphiphilic Assembly by Calixarene-Induced Aggregation

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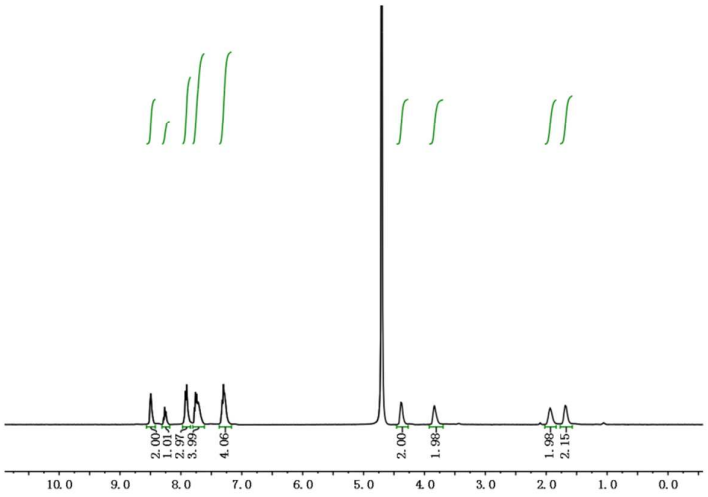


Figure S1. ^{1}H NMR spectrum (400 MHz, D_2O, 25 °C) of AnPy.

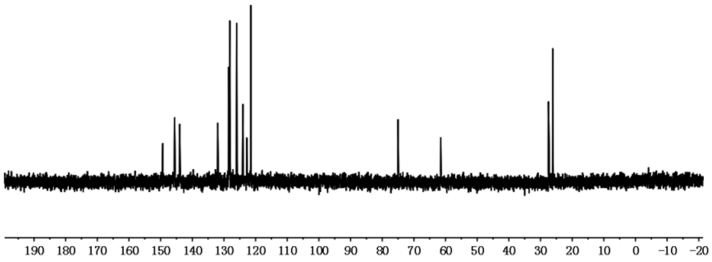


Figure S2. ^{13}C NMR spectrum (400 MHz, D_2O, 25 °C) of AnPy.

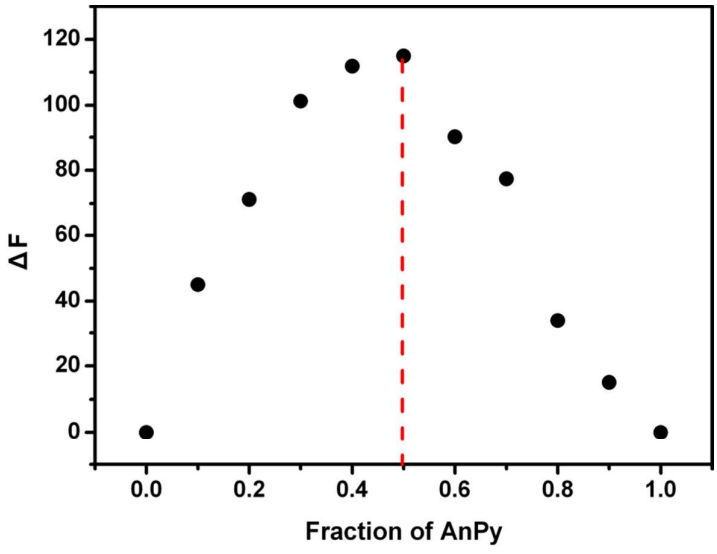


Figure S3. Job plot for the SC4A−AnPy system in water at 25 °C, [AnPy] + [SC4A] = 10 μM (λ_{ex} = 365 nm and λ_{em} = 417 nm).

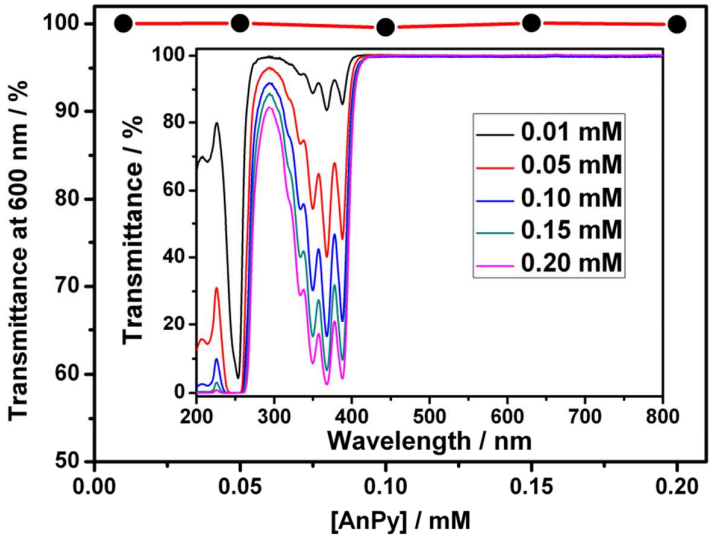
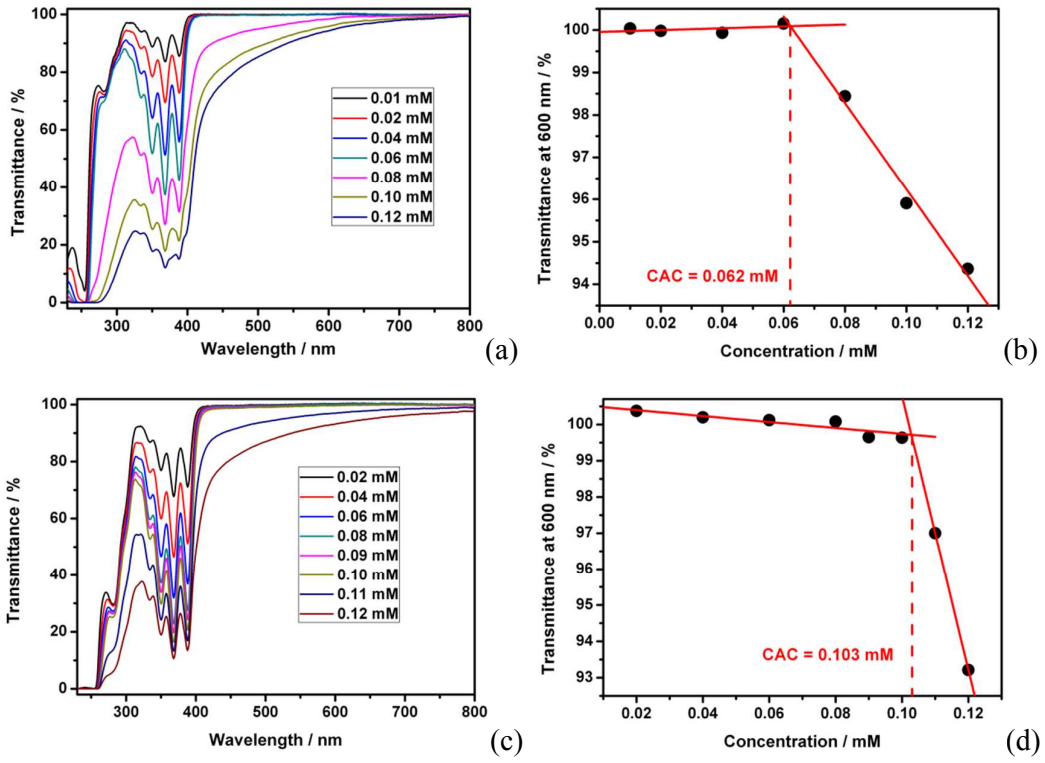
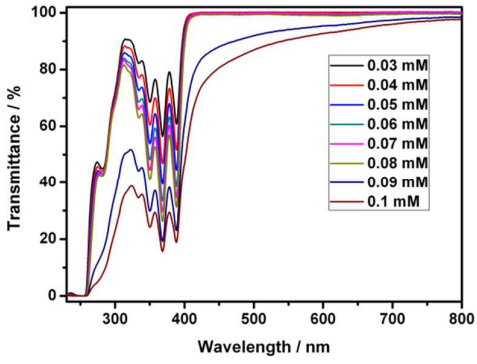


Figure S4. Dependence of the optical transmittance at 600 nm on AnPy concentration. Inset: optical transmittance of aqueous solutions of AnPy at different concentrations at 25 °C.





(e)

Figure S5. (a) Optical transmittance of AnPy at different concentrations in the presence of SC4A (0.02 mM) at 25 °C in water. (b) Dependence of the optical transmittance at 600 nm on AnPy concentration in the presence of SC4A (0.02 mM). (c) Optical transmittance of AnPy at different concentrations in the presence of SC4A (0.08 mM) at 25 °C in water. (d) Dependence of the optical transmittance at 600 nm on AnPy concentration in the presence of SC4A (0.08 mM). (e) Optical transmittance of AnPy at different concentrations in the presence of SC4A (0.05 mM) at 25 °C in water.

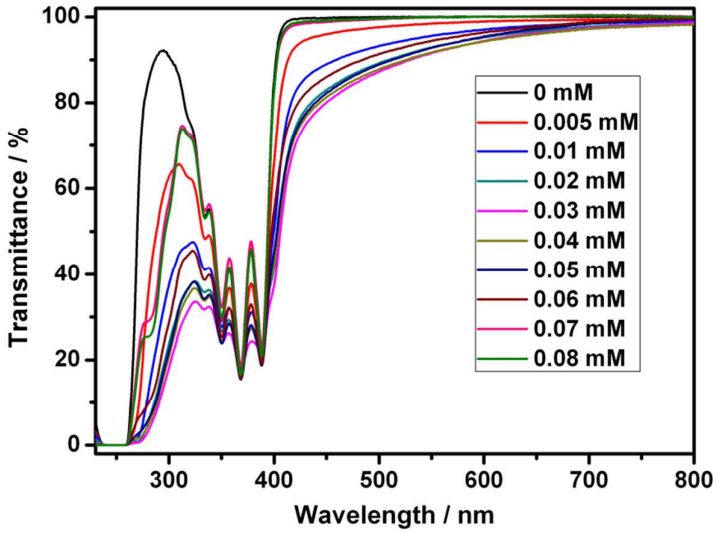


Figure S6. Optical transmittance of AnPy (0.10 mM) upon increasing concentration of SC4A (0−0.08 mM) at 25 °C in water.

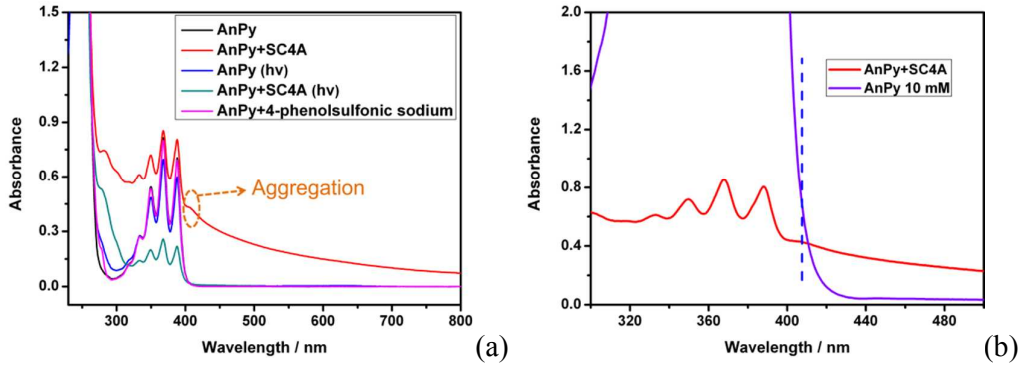


Figure S7. (a) UV/VIS absorption spectra of AnPy (0.10 mM), SC4A−AnPy assembly, AnPy after UV irradiation at 365 nm for 30 min, SC4A−AnPy assembly after UV irradiation at 365 nm for 30 min and AnPy with sodium 4-phenolsulfonate (0.16 mM). (b) UV/VIS absorption spectra of SC4A−AnPy assembly and AnPy (8 mM, light path 5 mm) in water at 25 °C.

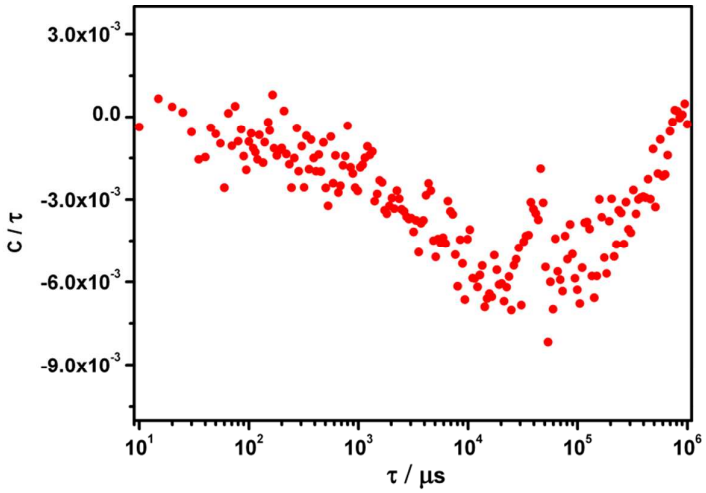


Figure S8. DLS data of AnPy (0.1 mM) in water at 25 °C.

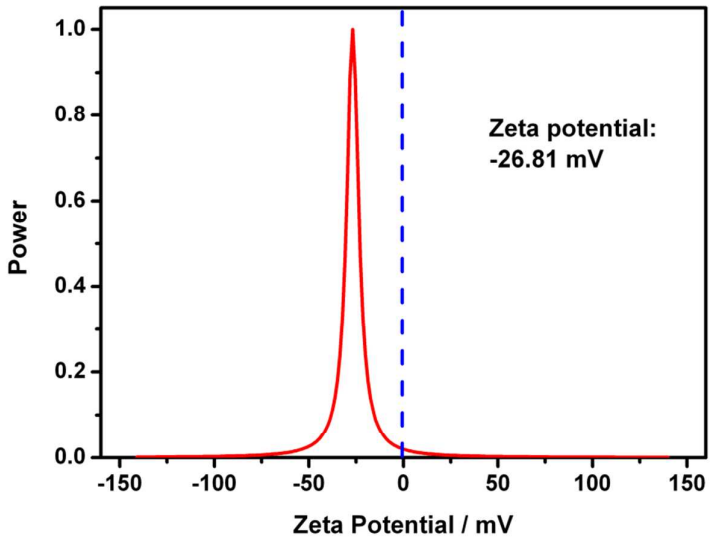


Figure S9. Zeta potential data of the SC4A−AnPy assembly in water at 25 °C.

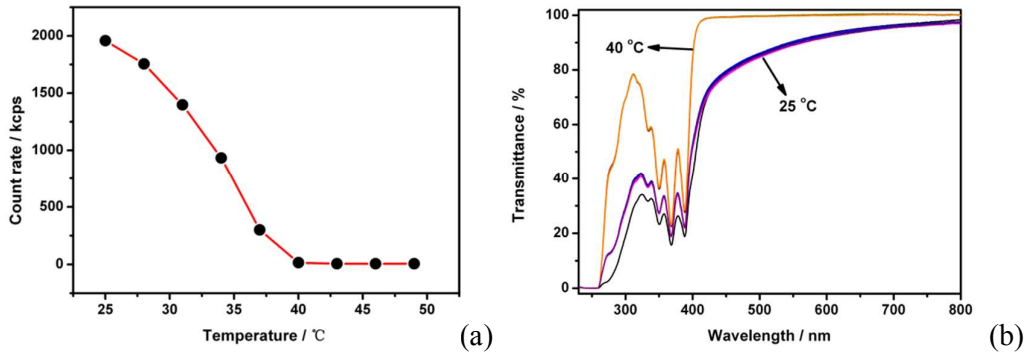
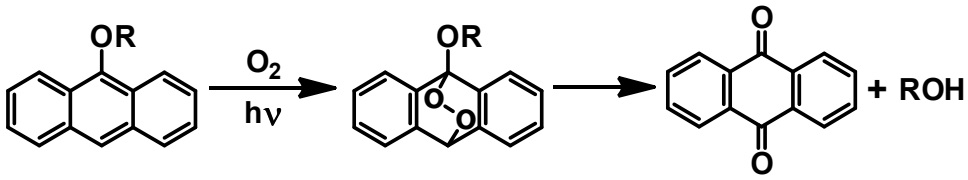


Figure S10. (a) Dependence of scattering intensity for the SC4A−AnPy assembly on temperature. (b) Optical transmittance of the SC4A−AnPy assembly upon several cycles of thermal equilibration in water at 25 and 40 °C.



Scheme S1. Mechanism of photooxidation and further decomposition of 9-anthroxy alkyl ether.

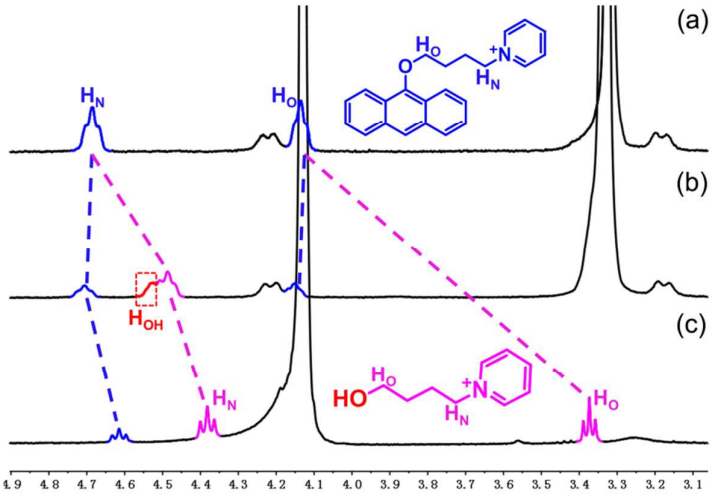


Figure S11. Partial ^{1}H NMR spectra of SC4A−AnPy assembly (a) before and (b) after UV irradiation (365 nm) for 30 min in DMSO-d_6 and (c) DMSO-d_6 with a small amount of D_2O (9:1 v/v). [SC4A] = 0.96 mM, [AnPy] = 2.4 mM.

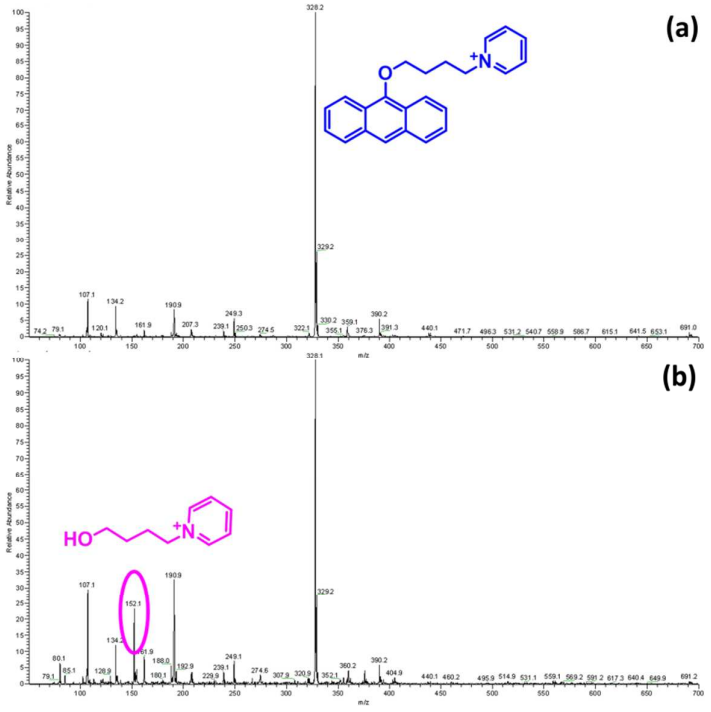


Figure S12. ESI-MS spectra of the SC4A−AnPy assembly (a) before and (b) after UV irradiation (365 nm) for 30 min.

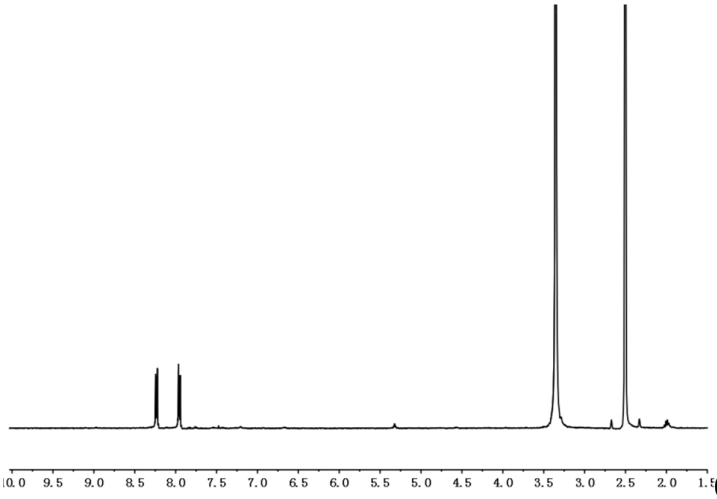


Figure S13. (a) ^{1}H NMR spectrum (400 MHz, DMSO-d_6, 25 °C) of the precipitates produced in the solution of SC4A−AnPy assembly upon UV irradiation (365 nm). (b) EI-MS spectrum of the precipitates.

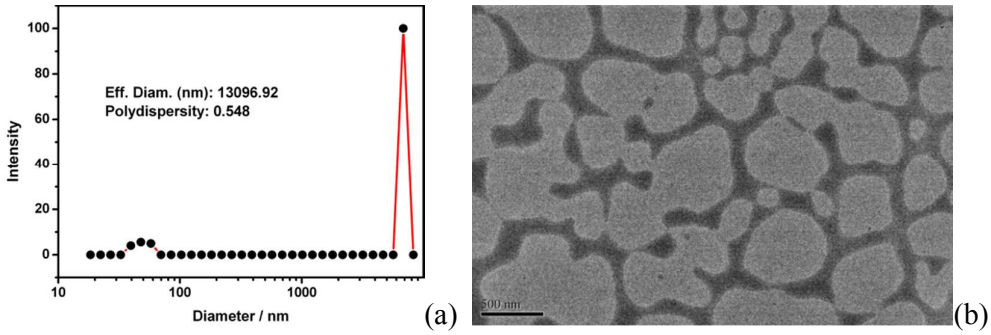


Figure S14. (a) DLS data and (b) TEM image of the SC4A−AnPy assembly upon UV irradiation (365 nm) for 30 min.

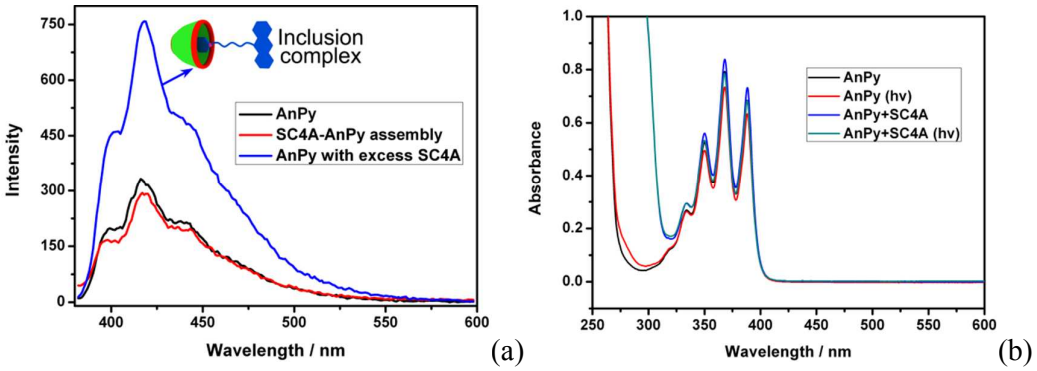


Figure S15. (a) Fluorescence spectra of AnPy (0.10 mM), SC4A−AnPy assembly, and AnPy (0.10 mM) with excess SC4A (0.30 mM) at 25 °C (λ_{ex} = 365 nm). (b) UV/VIS absorption spectra of AnPy (0.10 mM) in the absence and presence of excess SC4A (0.30 mM) before and after UV irradiation at 365 nm for 30 min at 25 °C.

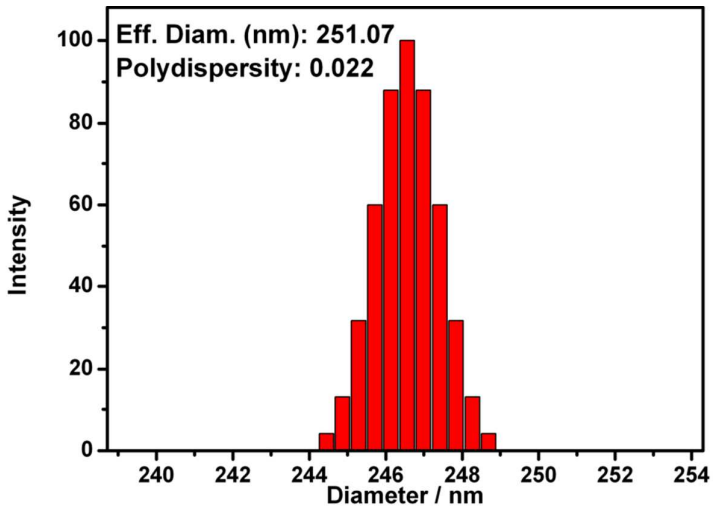


Figure S16. DLS data of the SC4A−AnPy assembly in the presence of eosin Y (0.01 mM) at 25 °C.

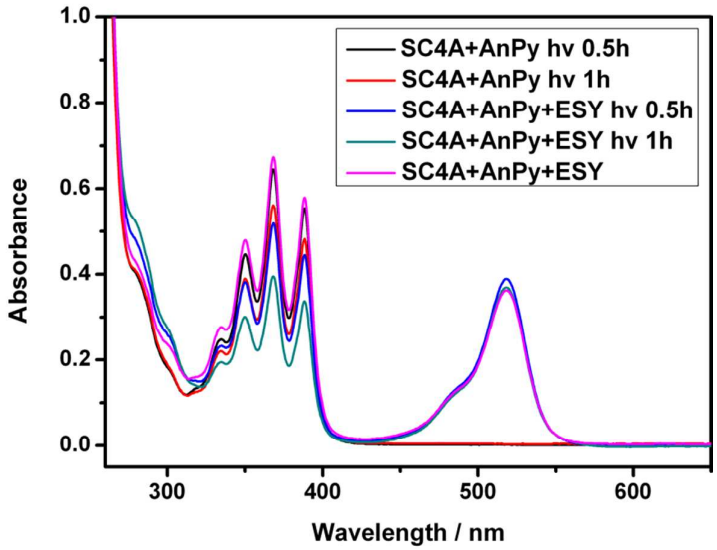


Figure S17. UV/VIS absorption spectra of SC4A−AnPy assembly in the absence and presence of eosin Y (ESY) (0.01 mM) upon irradiation with light at 520 nm for various periods of time (measured at 40 °C).