Electronic Supplementary Material (ESI) for Soft Matter.

UV and NIR dual-responsive self-assembly systems based on a novel coumarin derivative surfactant

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Supporting Information

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Synthetic route was followed as the patent in reference 1. PAS purity analysis as follow:

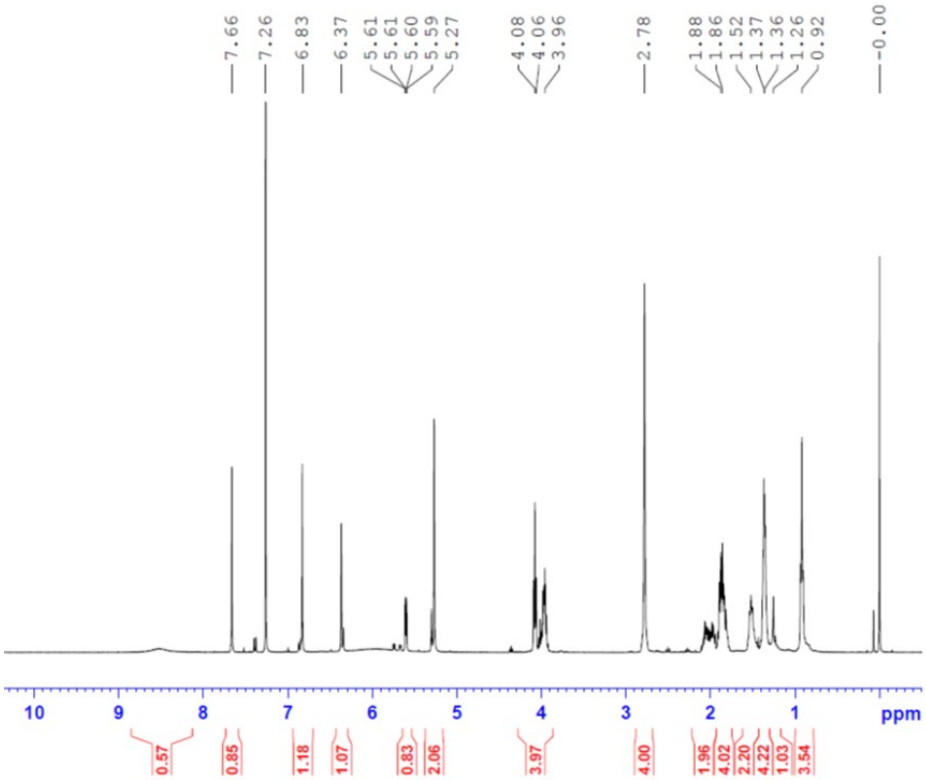

Figure S1. ^{1}H-NMR ($CDCl_3$, 400 MHz): δ = 0.92 (s, CH_3, 3H), 1.26-1.34 (m, CH_2, 2H) 1.50-1.53 (m, CH_2, 2H), 1.86-1.88 (m, CH_2, 2H), 2.78-2.81 (m, OCH_2, 4H), 4.06-4.09 (m, CH_2O, 2H), 5.27-5.30 (m, $ArCH_2O$, 2H), 6.36 (m, ArH, 1H), 6.83 (m, ArH, 1H), 7.66-7.67 (m, ArH, 1H).

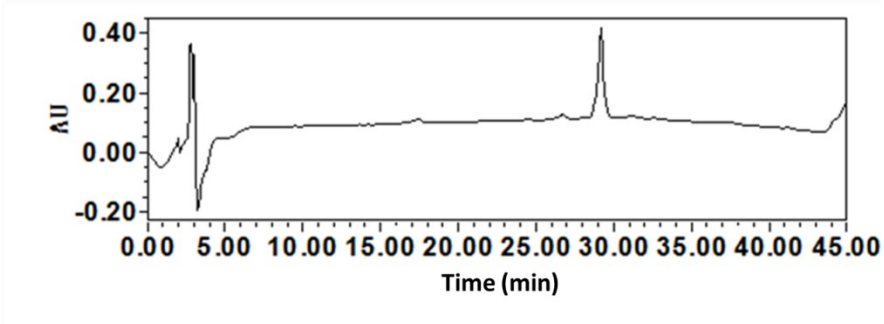

Figure S2. HPLC of PAS, the purity > 95%.

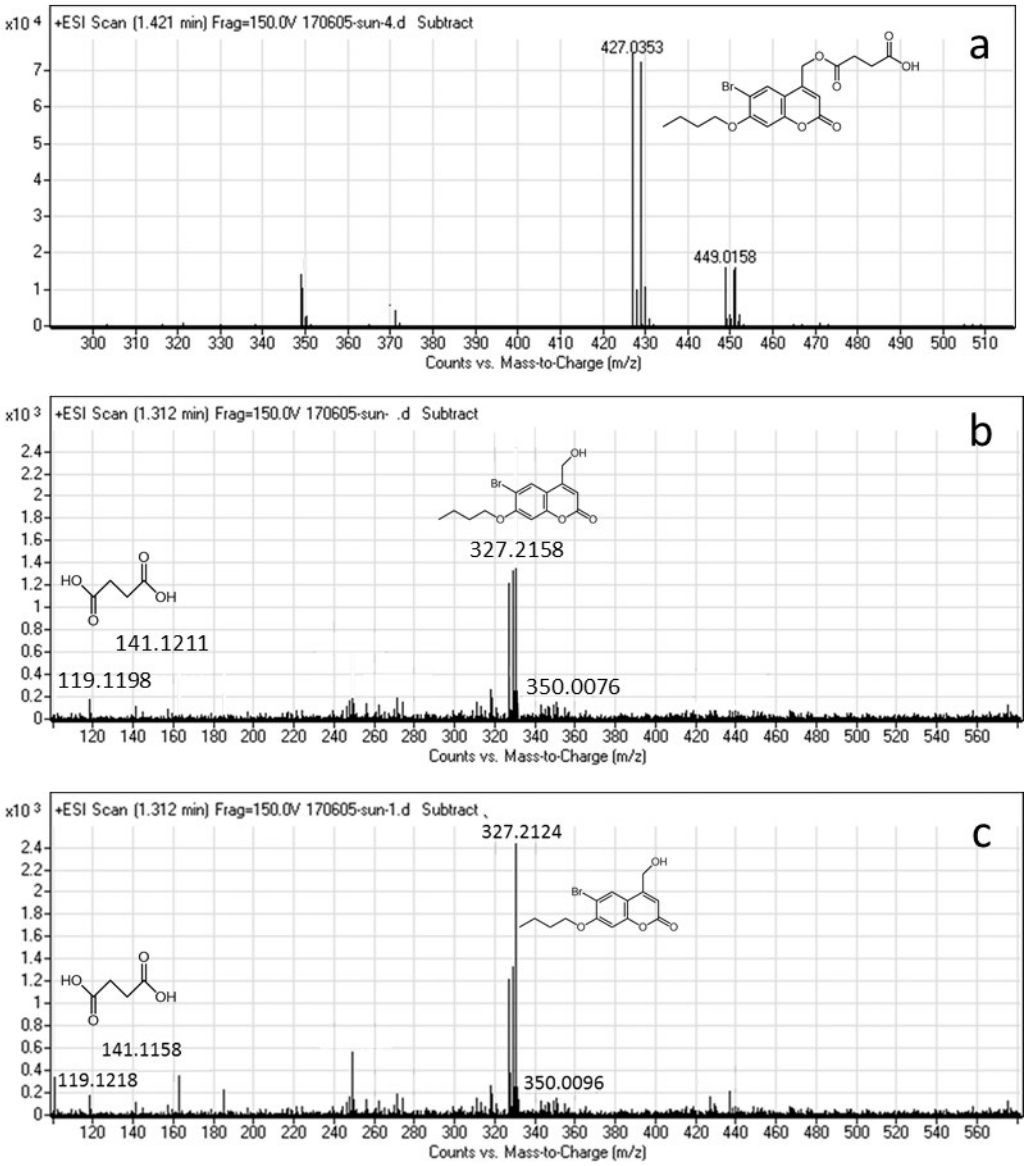

Figure S3. MS of PAS-Na (a), PAS-Na after UV irradiation (b) and PAS-Na after NIR irradaiton (c).

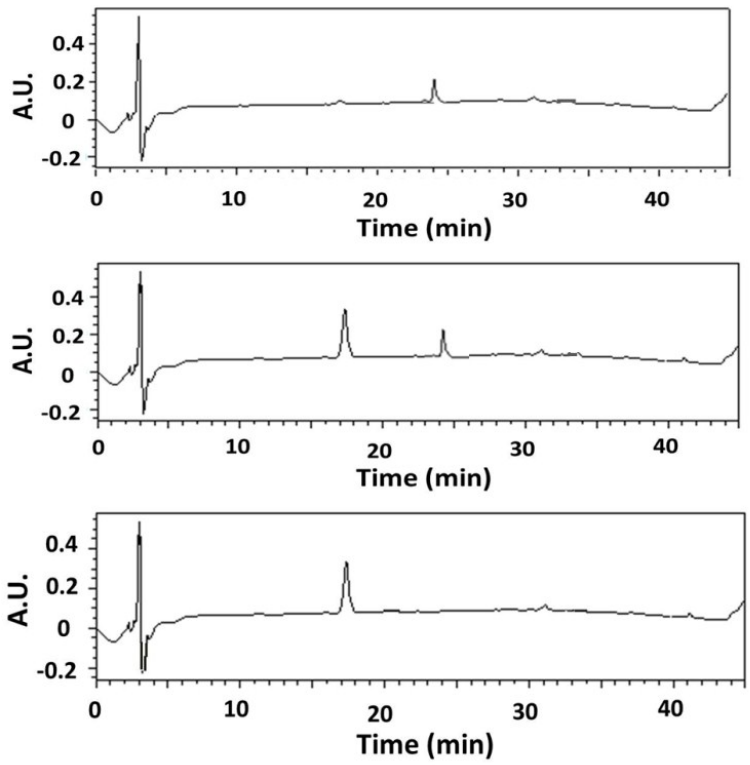

Figure S4. HPLC of 3 mmol·L-1 PAS-Na undergoing UV irradiation. From top to bottom the irradiation time is 0, 1 and 3 minutes.

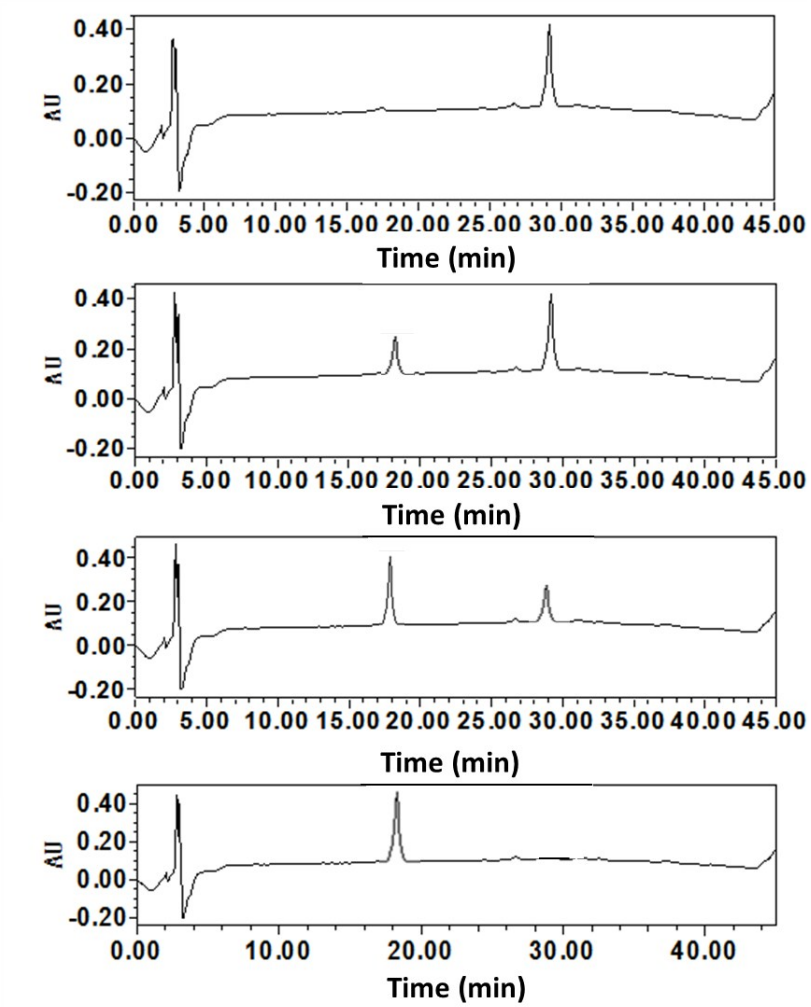

Figure S5. HPLC of 3 mmol·L-1 PAS-Na undergoing NIR irradiation. From top to bottom the irradiation time is 0, 10, 30 and 45 minutes.

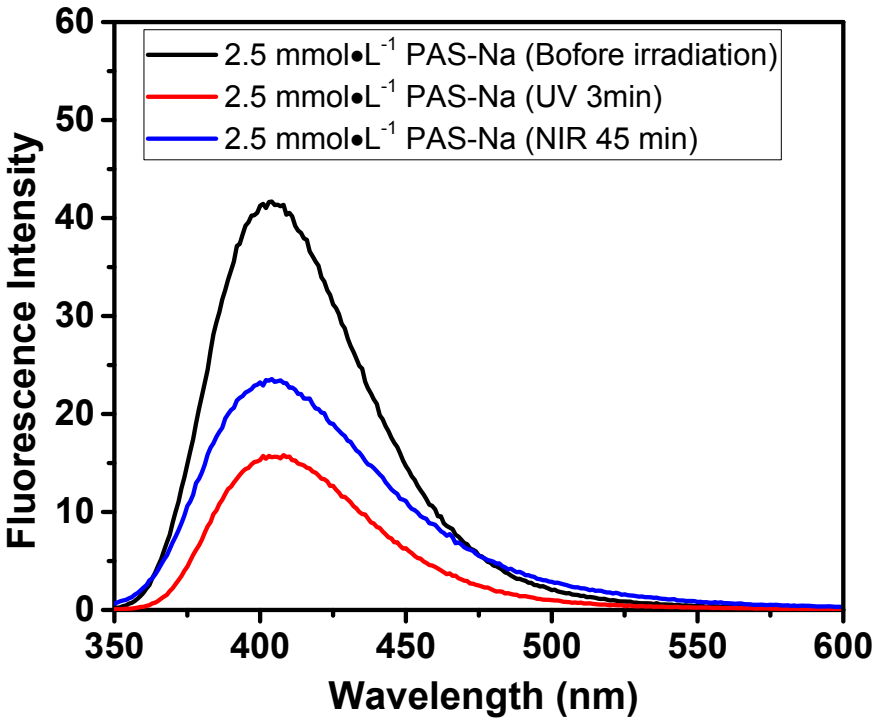

Figure S6. Fluorescence spectrum of PAS-Na before and after UV or NIR irradiation.

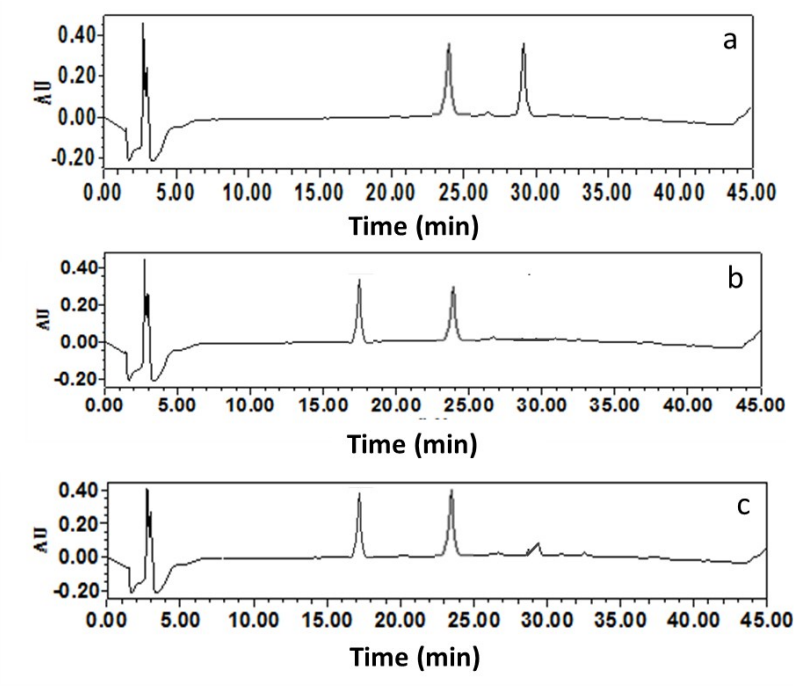

Figure S7. HPLC of 150 mmol•L^{-1} C_{14}DMAO with 30 mmol•L^{-1} PAS (a), after 10 minutes UV irradiation (b) and after 1 hour NIR irradiation (c).

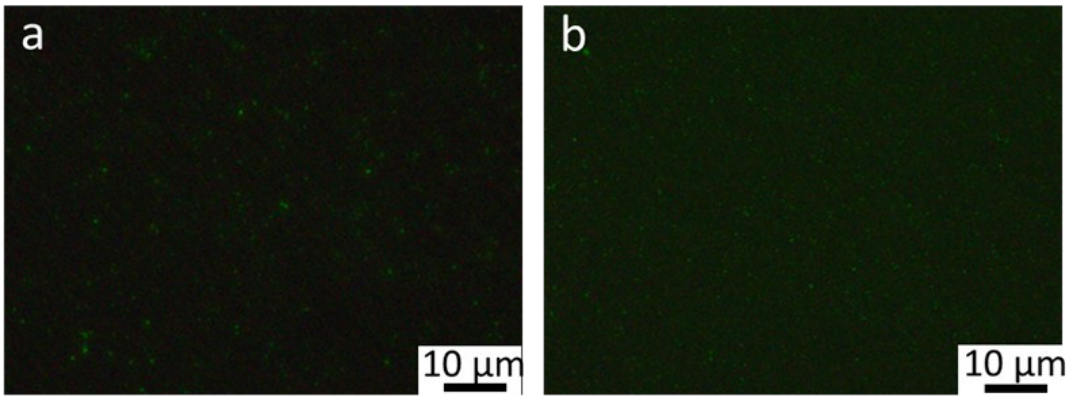

Figure S8. Fluorescence microscope images of 150 mmol•L^{-1} C_{14}DMAO with 30 mmol•L^{-1} PAS (a) and 150 mmol•L^{-1} C_{14}DMAO with 50 mmol•L^{-1} PAS (b).

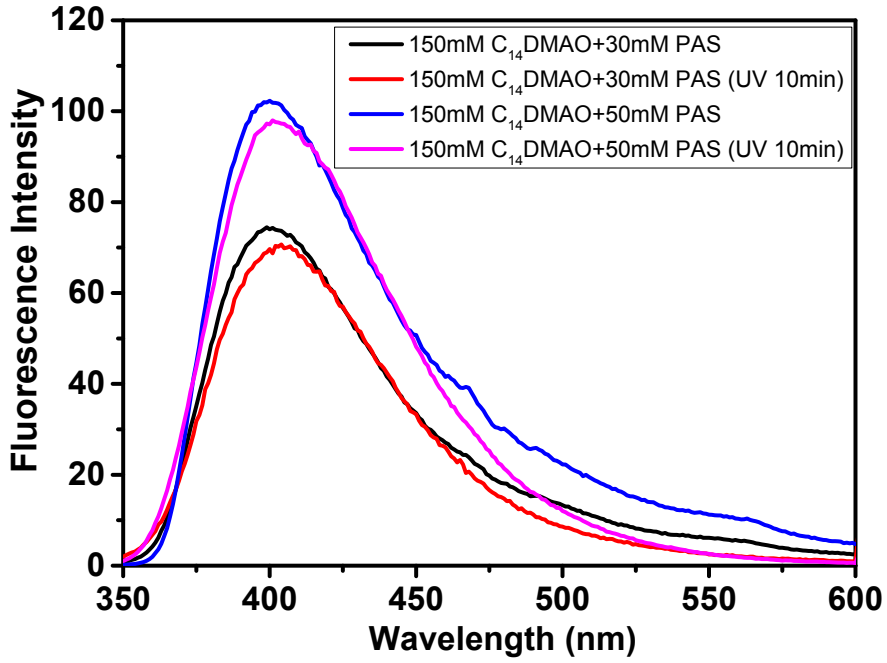

Figure S9. Fluorescence spectrum of C14DMAO/PAS mixed system before and after UV irradiation.

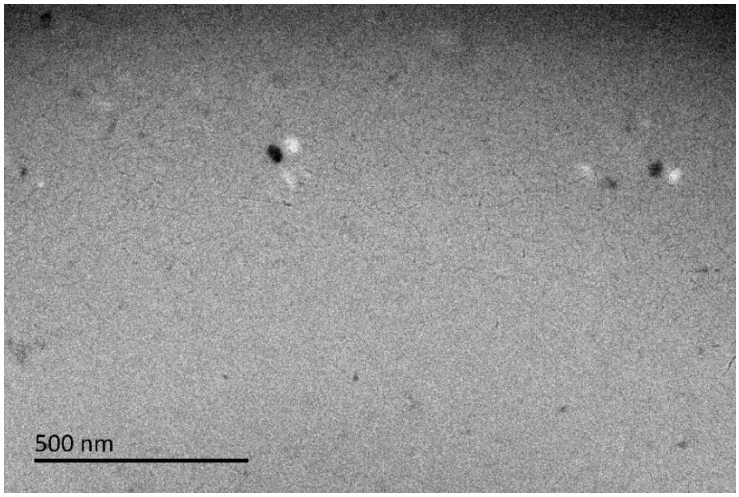

Figure S10. Cryo-TEM image of 150 mmol·L^{-1} C_{14}DMAO with 50 mmol·L^{-1} succinic acid.

References:

1. J. Wang, M. Cao, H. Yu, Y. Yan and Y. Sun, China Patent ZL201510163606.1.