Electronic Supplementary Material (ESI) for Polymer Chemistry

Supporting information

Structurally Dependent Self-assembly and Luminescence of Polyoxometalate-cored Supramolecular Star Polymers

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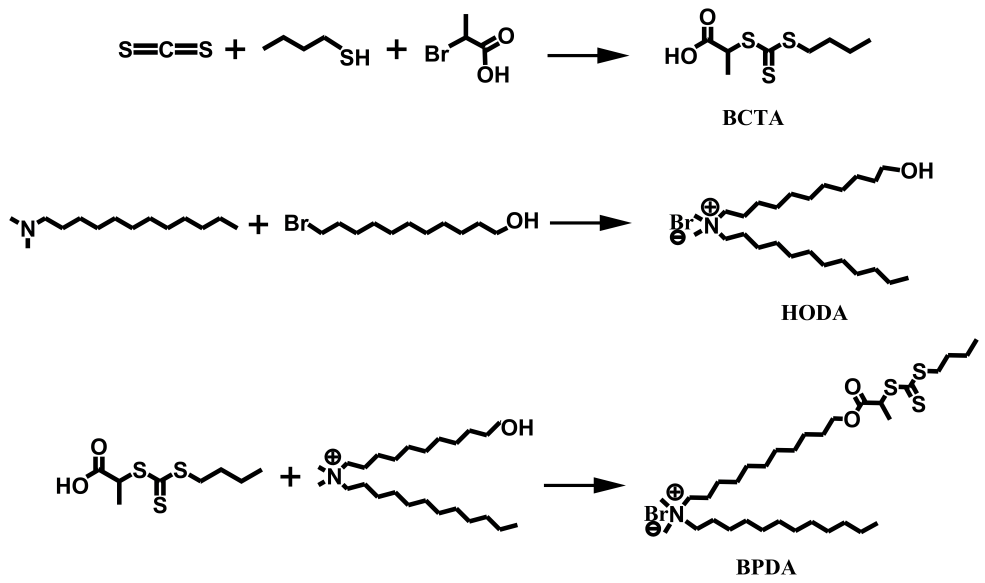

Scheme S1. Synthesis route of the bifunctional surfactant BPDA.

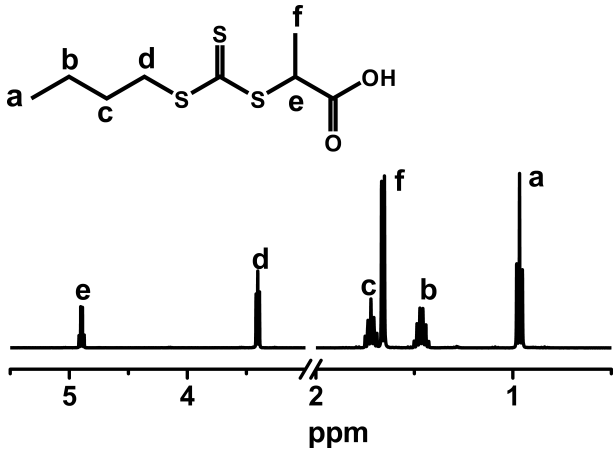

Fig. S1 ^{1}H NMR spectrum of BCTA.

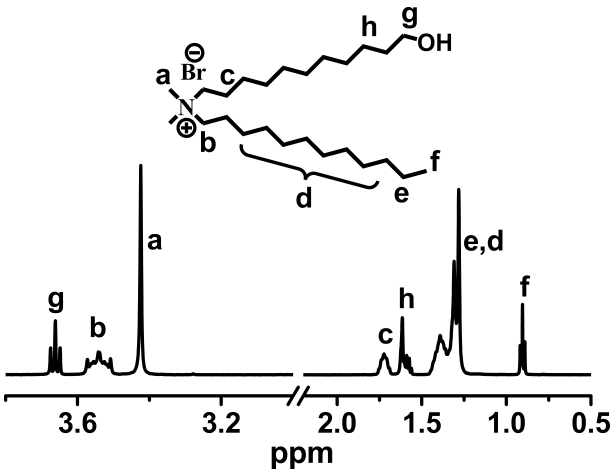

Fig. S2 ^{1}H NMR spectrum of HODA.

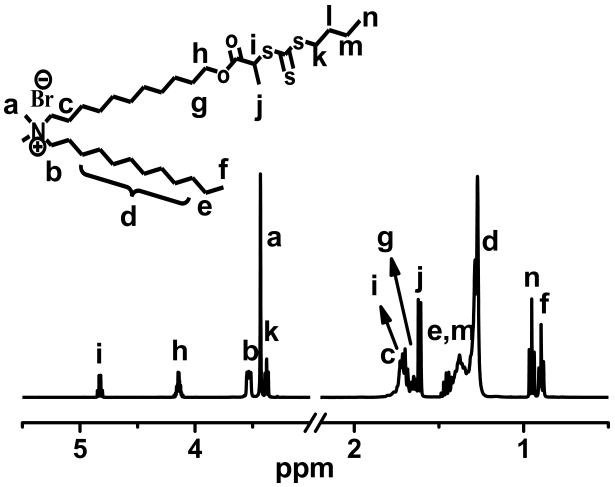

Fig. S3 ^{1}H NMR spectrum of BPDA.

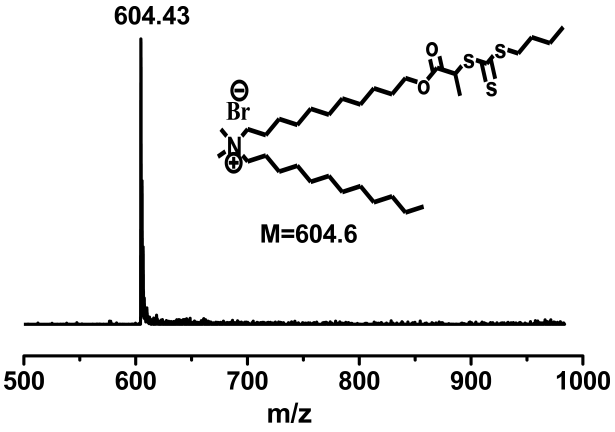

Fig. S4 MALDI-TOF result of the BPDA.

Table S1. Elemental analysis results of the four EuW_{10}-cored SSP.

	C (%)	H (%)	N (%)
Experimental results of BCTA	40.63	5.93	-
Calculated value of ($C_8H_{14}O_2S_3$)Molecular weight: 238.0	40.30	5.91	-
Experimental results of HODA	64.69	11.34	2.86
Calculated value of $C_{25}H_{54}NOBr$ Molecular weight: 463.4	64.62	11.71	3.01
Experimental results of BPDA	56.82	9.42	2.01
Calculated value of $C_{33}H_{66}NO_2S_3.H_2O$ Molecular weight: 703.0	56.38	9.75	1.99
Experimental results of SSP-12	69.43	7.07	0.89
Calculated value of $(C_{33}H_{66}NO_2S_3)_9((C_8H_8)_{12})_7EuW_{10}O_{36}$ Molecular weight: 16760.6	69.44	7.61	0.75
Experimental results of SSP-44	82.65	7.52	0.29
Calculated value of $(C_{33}H_{66}NO_2S_3)_9((C_8H_8)_{44})_7EuW_{10}O_{36}$ Molecular weight: 40090.0	82.76	7.69	0.31
Experimental results of SSP-71	85.94	7.52	0.25
Calculated value of $(C_{33}H_{66}NO_2S_3)_9((C_8H_8)_{71})_7EuW_{10}O_{36}$ Molecular weight: 59774.2	85.86	7.70	0.21
Experimental results of SSP-120	88.16	7.63	0.20
Calculated value of $(C_{33}H_{66}NO_2S_3)_9((C_8H_8)_{120})_7EuW_{10}O_{36}$ Molecular weight: 95497.3	88.25	7.72	0.13

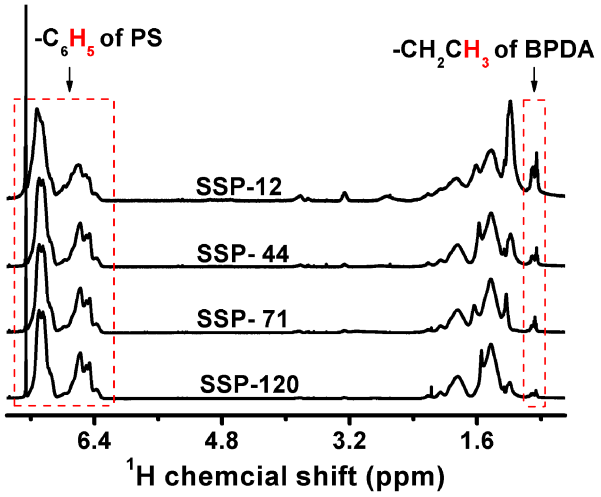

Fig. S5 ^1H NMR spectra of the four EuW_{10}-cored SSP in $CDCl_3$.

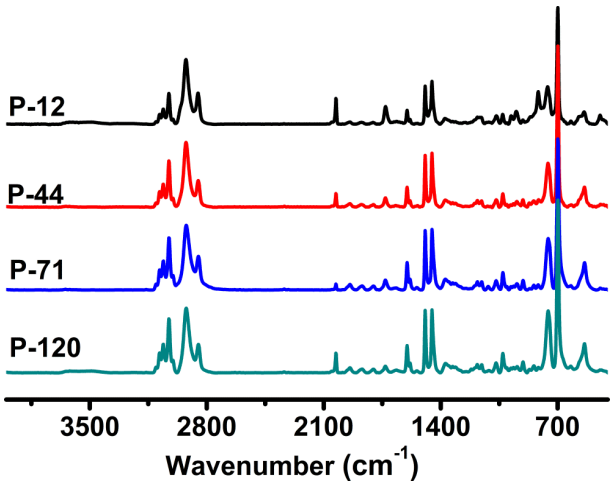

Fig. S6 FTIR spectra of the four EuW_{10}-cored SSP in KBr pellets.

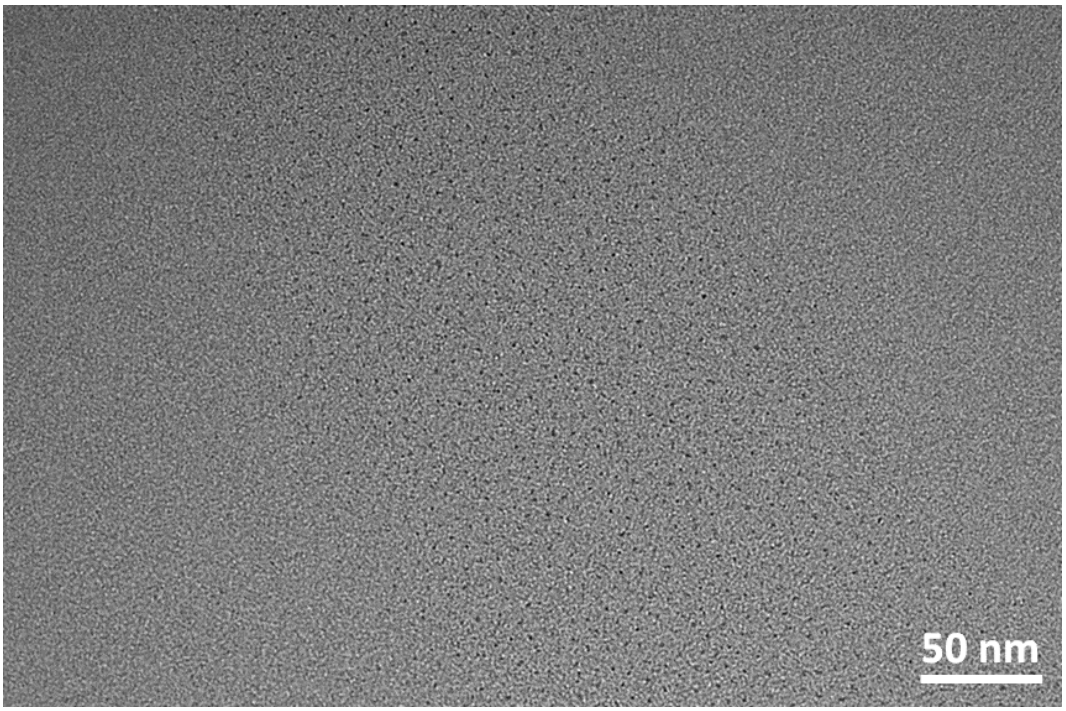

Fig. S7 TEM image of SSP-12 before being stained by RuO_4.

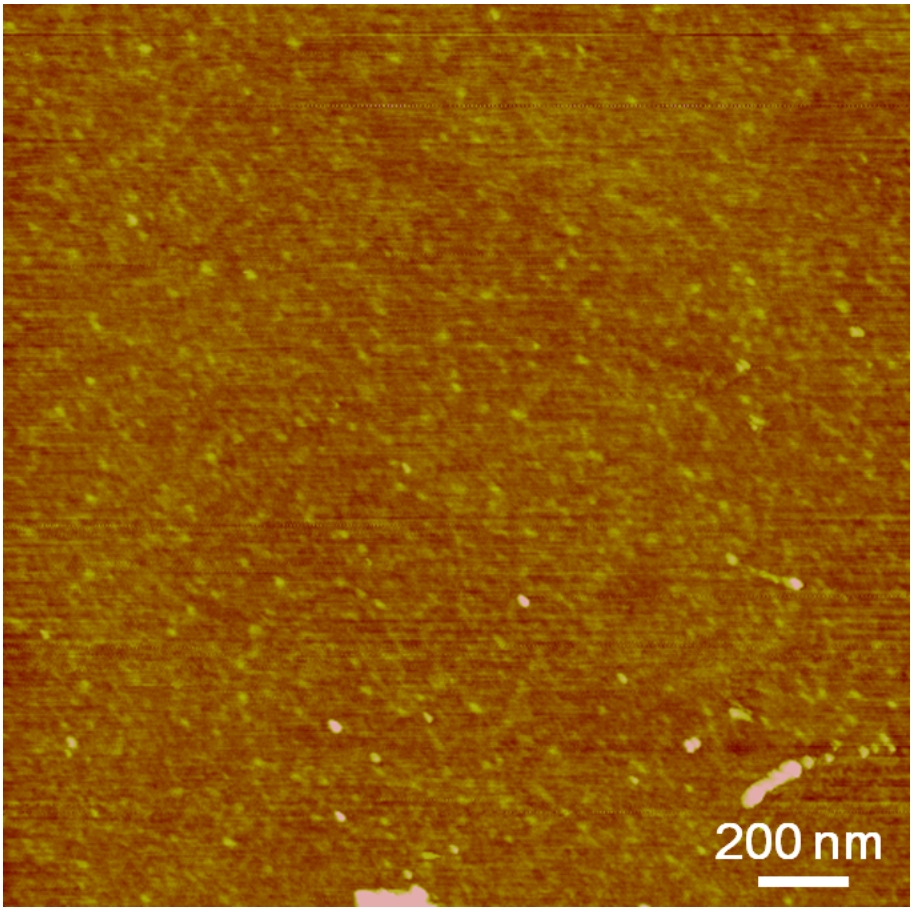

Fig. S8 AFM image of SSP-120 on silica substrate.

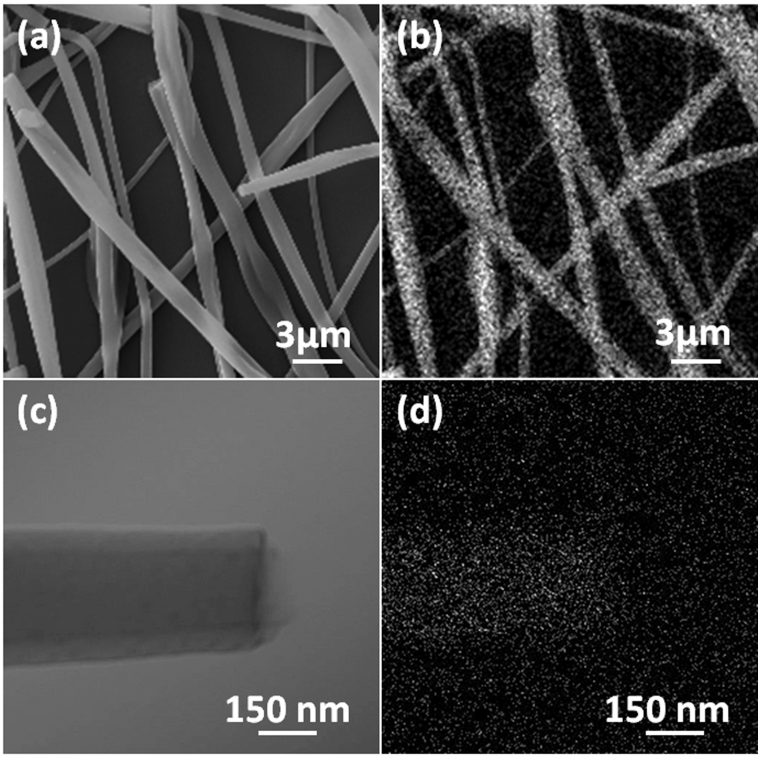

Fig. S9 (a) SEM image of SSP-120 fibers prepared by electrospinning and (b) its

EDX mapping image by analyzing C element; (c) TEM image of a fiber and (d) its EDX mapping image by analyzing W element. Because the weight content of C and W in SSP-120 are 88.25% and 1.93% respectively, the EDX signal of W is relatively weak.

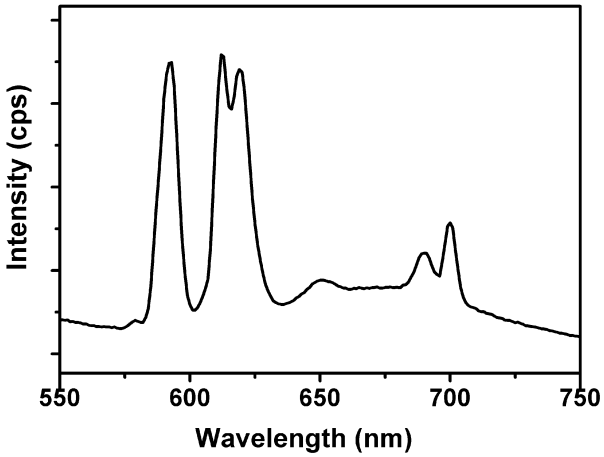

Fig. S10 Emission spectrum of SSP-120 fiber prepared by electrospinning at an excitation wavelength of 275 nm.