## **Supporting Information**

## Various Tetraphenylethen-based AIEgens with Four Functional Polymer Arms: Versatile Synthetic Approach and Photophysical Properties

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	$Mn(\times 10^4)$	$Mw(\times 10^4)$	$MP(\times 10^4)$	$Mz(\times 10^4)$	Polydispersity
TPE-AZO	0.39	0.58	0.42	0.83	1.487
TPE-PNIPAM	0.37	0.55	0.45	0.79	1.482
TPE-PS	0.74	1.27	1.26	1.88	1.717
TPE-PMA	0.29	0.40	0.23	0.58	1.400
TPE-PMMA	0.74	1.11	0.96	1.57	1.502
TPE-PVK	0.45	0.72	0.65	1.08	1.607
TPE-PMETAC	1.29	2.23	1.16	7.45	1.720
TPE-PMAA	21.1	32.1	24.4	52.5	1.521
TPE-PVP	7.89	21.4	5.57	46.3	2.716
TPE-PMPEGMA	7.04	8.29	5.10	10.9	1.176

Table S1 GPC data of TPE-AZO and TPE-polymers.

d-DMSO a b 4.5 4.0 δ(ppm) 8.0 6.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 7.5 7.0 6.5 5.5 5.0

Figure S1. <sup>1</sup>H NMR spectra of TPE-AZO in DMSO-*d*<sub>6</sub>.



Figure S2. <sup>15</sup>N NMR spectra of TPE-AZO in DMSO-*d*<sub>6</sub>.



Figure S3. FTIR spectrum of TPE-OH, ACVA and TPE-AZO.



Figure S4. <sup>1</sup>H NMR spectra of TPE-OH in DMSO-*d*<sub>6</sub>.



Figure S5. <sup>13</sup>C NMR spectra of TPE-OH in DMSO-*d*<sub>6</sub>.



Figure S7. <sup>1</sup>H NMR spectra of TPE-PMA in DMSO-*d*<sub>6</sub>. (Inset: a larger version of

 $^1\text{H}$  NMR spectra of TPE-PMA with the  $\delta$  from 6.4 to 6.8).



Figure S8. <sup>1</sup>H NMR spectra of TPE-PMAA in DMSO-d<sub>6</sub>. (Inset: a larger version of

<sup>1</sup>H NMR spectra of TPE-PMAA with the  $\delta$  from 6.1 to 6.5).



Figure S9. <sup>1</sup>H NMR spectra of TPE-PMETAC in D<sub>2</sub>O. (Inset: a larger version of

 $^1\text{H}$  NMR spectra of TPE-PMETAC with the  $\delta$  from 6.7 to 7.3).



Figure S10. <sup>1</sup>H NMR spectra of TPE-PMMA in CDCl<sub>3</sub>. (Inset: a larger version of

 $^1\text{H}$  NMR spectra of TPE-PMMA with the  $\delta$  from 6.5 to 6.9).



Figure S11. <sup>1</sup>H NMR spectra of TPE-PMPEGMA in D<sub>2</sub>O. (Inset: a larger version of

<sup>1</sup>H NMR spectra of TPE-PMPEGMA with the  $\delta$  from 7.4 to 7.7).



Figure S12. <sup>1</sup>H NMR spectra of TPE-PNIPAM in DMSO- $d_6$ . (Inset: a larger version of <sup>1</sup>H NMR spectra of TPE-PNIPAM with the  $\delta$  from 6.4 to 6.8).



Figure S13. <sup>1</sup>H NMR spectra of TPE-PS in CDCl<sub>3</sub>.



Figure S14. <sup>1</sup>H NMR spectra of TPE-PVK in CDCl<sub>3</sub>.



Figure S15. <sup>1</sup>H NMR spectra of TPE-PVP in  $D_2O$ . (Inset: a larger version of <sup>1</sup>H NMR spectra of TPE-PVP with the  $\delta$  from 7.3 to 7.5).