Supporting Information

Complexing AIEE-active tetraphenylthiophene fluorophore to poly(N-isopropyl acrylamide): fluorescence responses toward acid, base and metal ions

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Fig. S1 $^1$H NMR spectrum of (A) TP2NO$_2$ (CDCl$_3$) and (B) TP2NH$_3^+$ (DMSO-d6).
Fig. S2 $^1$H NMR spectrum of (A) SAES (D$_2$O) and (B) SECPS (CD$_2$Cl$_2$).
**Fig. S3** FT-IR spectra of SBES, SAES and SECPS.

**Fig. S4** The $^1$H NMR spectrum of TP-PNIPAM (CD$_2$Cl$_2$).
Fig. S5 Mass spectra of (A) PNIPAM, (B) SECPS and (C) TP-PNIPAM.
Fig. S6 The UV-vis absorption spectra of aqueous PNIPAM solution (1.7 x 10^{-4} M), solution of TP2NH3SO3CH2CH2Br (10^{-5} M) in DMF, TP2NH3SO3CH2CH2Br (10^{-5} M) in PNIPAM (1.7 x 10^{-4} M), and DMSO solution of TP-PNIPAM (1.26 x 10^{-4} M).
Fig. S7 Histograms of (A) TP2NH$_3^+$ solutions in THF/water and (B) TP-PNIPAM (10$^{-5}$ M) in ethanol/acetone mixtures of different water and acetone contents.
Fig. S8 TEM image of micelles cast from the dilute aqueous solution of TP-PNIPAM. ([TP-PNIPAM] = 1.335 x 10^{-4} M)

Fig. S9 FL emission spectrum of the aqueous solution of SECPS at pH = 2. ([SECPS] = 2.829 x 10^{-4} M; λ_{ex} = 350 nm).