Electronic Supporting Information for

Poly(phenylene-ethynylene-\textit{alt}-tetraphenylethene) Copolymers:
Aggregation Enhanced Emission, Induced Circular Dichromism, Tunable
Surface Wettability and Sensitive Explosive Detection

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Figure S1. $^1$H NMR spectrum of BETPE in CDCl$_3$.

Figure S2. $^{13}$C NMR spectrum of BETPE in CDCl$_3$. 
Figure S3. $^1$H NMR spectrum of **PFDI** in CDCl$_3$. The solvent peak was marked with asterisks.

Figure S4. $^{13}$C NMR spectrum of **PFDI** in CDCl$_3$. 

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*Chemical shift (ppm)*
Figure S5. $^{19}$F NMR spectrum of PFDI in CDCl$_3$.

Figure S6. HRMS of the PFDI. Calculated: 539.8143. Found: 539.8151
Figure S7. $^1$H NMR spectrum of the model compound in CDCl$_3$. The solvent peak was marked with asterisks.

Figure S8. FTIR spectrum of the model compound.
Figure S9. $^1$H NMR spectrum of intermediate in CDCl$_3$. The solvent peak was marked with asterisks.

Figure S10. $^1$H NMR spectrum of M1 in CDCl$_3$. The solvent peak was marked with asterisks.
Figure S11. FTIR spectrum of M1 in thin film.

Figure S12. HRMS of M1. Calculated: 257.2355. Found: 258.2446.
Figure S13. $^1$H NMR spectrum of P0 in CDCl$_3$.

Figure S14. $^{19}$F NMR spectra of (A) P0 and (B) P1 in CDCl$_3$. 
Figure S15. $^1$H NMR spectrum of P1 in CDCl$_3$.

Figure S16. $^1$H NMR spectrum of P2 in CDCl$_3$. The solvent peak was marked with asterisks.
Figure S17. (A) PL spectra of P1 in THF/water mixtures with different water fractions. Concentration: 10 μM, λ<sub>ex</sub> = 382 nm. (B) Plot of peak PL intensity of P1 in THF/water mixtures with different water fractions.
Figure S18. Quantum yield of P1 in THF/water mixture with different water fractions. P1 concentration: 10 μM, λex = 382 nm. Aqueous solution of quinine sulfonate (Φ = 30%) was used as the standard of fluorescence quantum yield.

Figure S19. Quantum yield of P2 in THF/water mixture with different water fractions. P2 concentration: 10 μM, λex = 377 nm. Aqueous solution of quinine sulfonate (Φ = 30%) was used as the standard of fluorescence quantum yield.
Figure S20. Thermal gravity analysis of P0, P1 and P2 under N₂ atmosphere with a heating rate of 10 °C/min.
Figure S21. (A) PL spectra of P1 in THF/water mixture (1:9 by volume) with different amount of PA. Polymer concentration: 10 μM, $\lambda_{ex} = 382$ nm. (B) Stern-Volmer plot of $I_0/I - 1$ versus [PA] in THF/water mixture with $f_w = 90\%$. $I$ = peak intensity at [PA] $\neq 0$ mM and $I_0$ = peak intensity at [PA] $= 0$ mM.
Figure S22. (A) PL spectra of P2 in THF/water mixtures (1:9 by volume) with different amount of PA. Polymer concentration: 10 μM. Excitation wavelength: 377 nm. (B) Stern-Volmer plots of $I_0/I^{-1}$ versus [PA] in THF/water mixtures with $f_w = 90\%$. $I = \text{peak PL intensity at } [\text{PA}] \neq 0 \text{ mM}, \text{ and } I_0 = \text{peak PL intensity at } [\text{PA}] = 0 \text{ mM}.$