

Supporting Information for
Turn-off/on fluorescent sensors for Cu²⁺ and ATP in aqueous
solution based on tetraphenylethylene derivative

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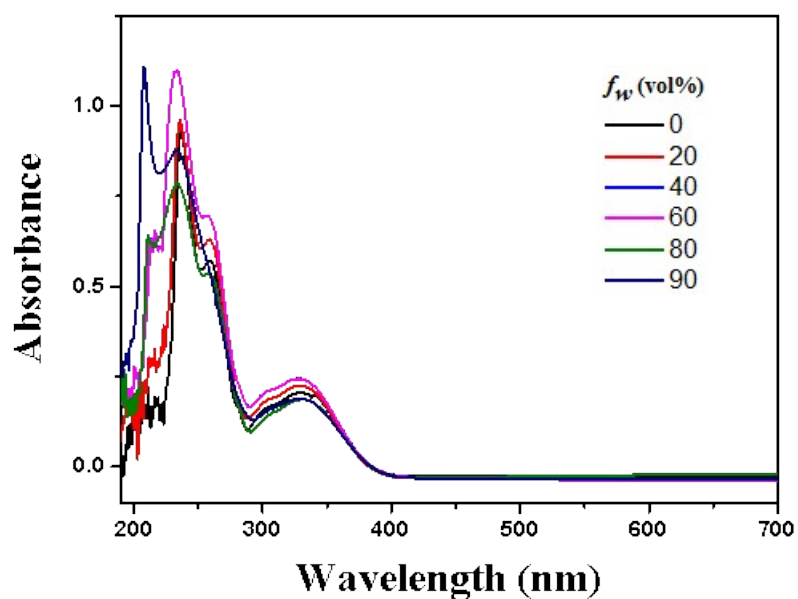


Fig. S1. UV/Vis spectra of TPE-COOH in different H₂O/EtOH mixtures from 0% to 90%. [TPE-COOH] = 1.0×10^{-5} mol/L.

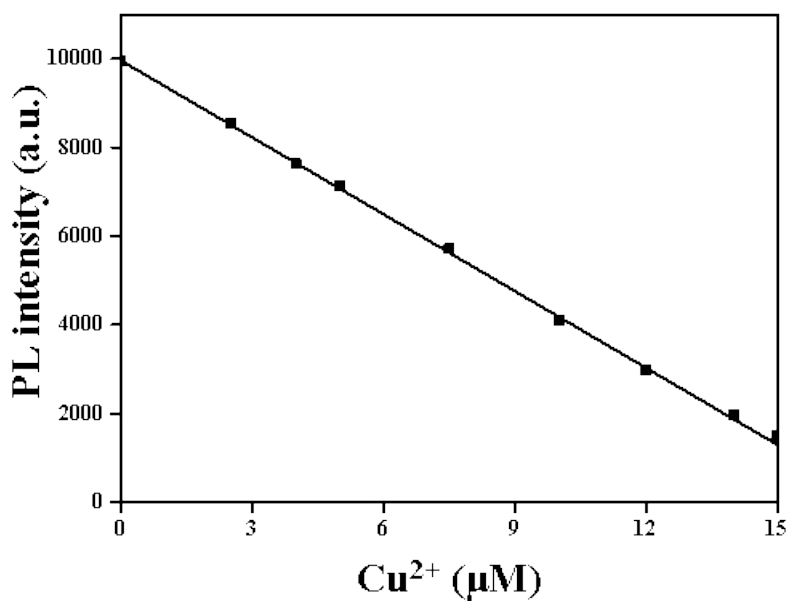


Fig. S2. Linear curve between maximum emission intensity of TPE-COOH and the Cu²⁺ concentration in HEPES buffer.

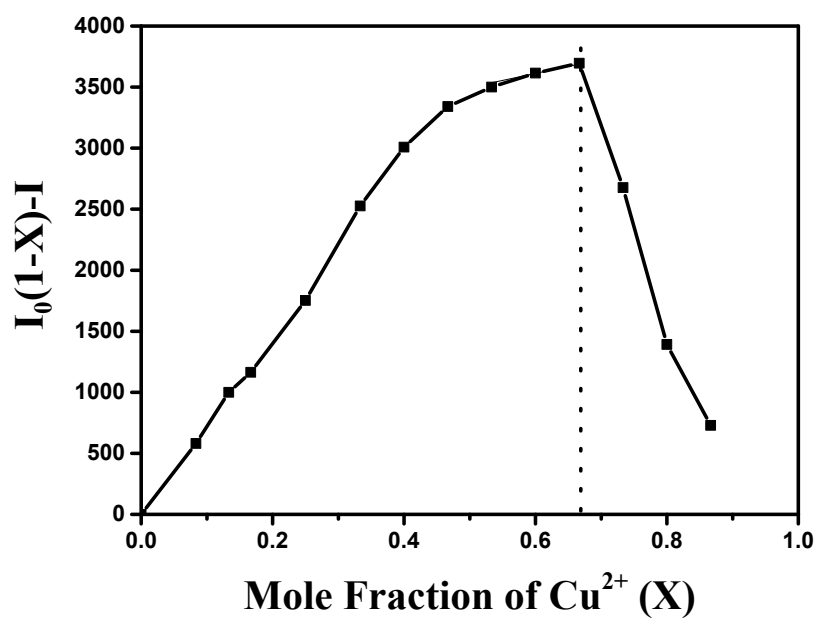


Fig. S3. Job's plot for determining the binding ratio of TPE-COOH to Cu^{2+} in HEPES buffer (10 mM, pH 7.4). The total concentration of TPE-COOH and Cu^{2+} ion is 20 μM .

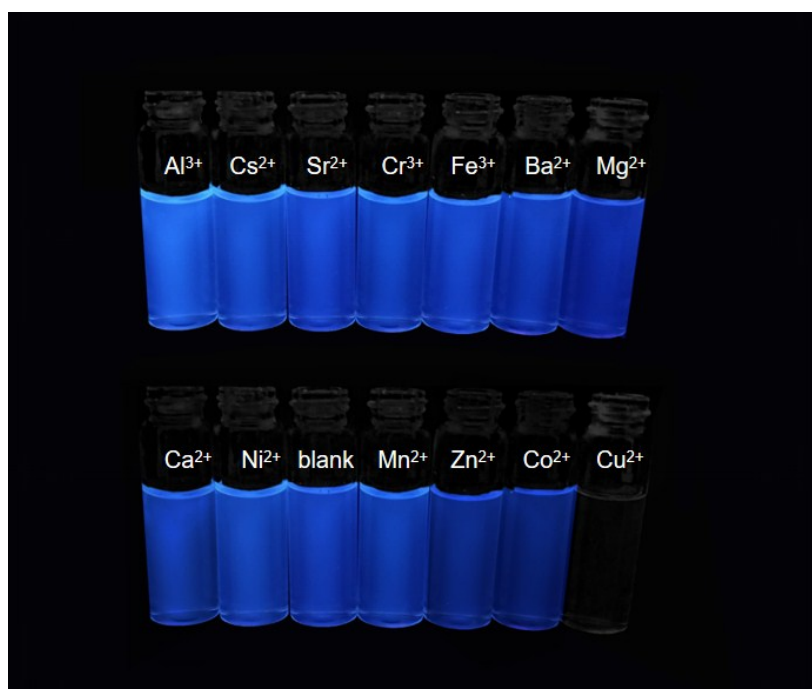


Fig. S4. Photos of TPE-COOH upon addition of various metal ions in HEPES buffer. $[\text{TPE-COOH}] = 1.0 \times 10^{-5}$ mol/L; $[\text{metal}] = 2.0 \times 10^{-5}$ mol/L; $\lambda_{\text{exc}} = 365$ nm.

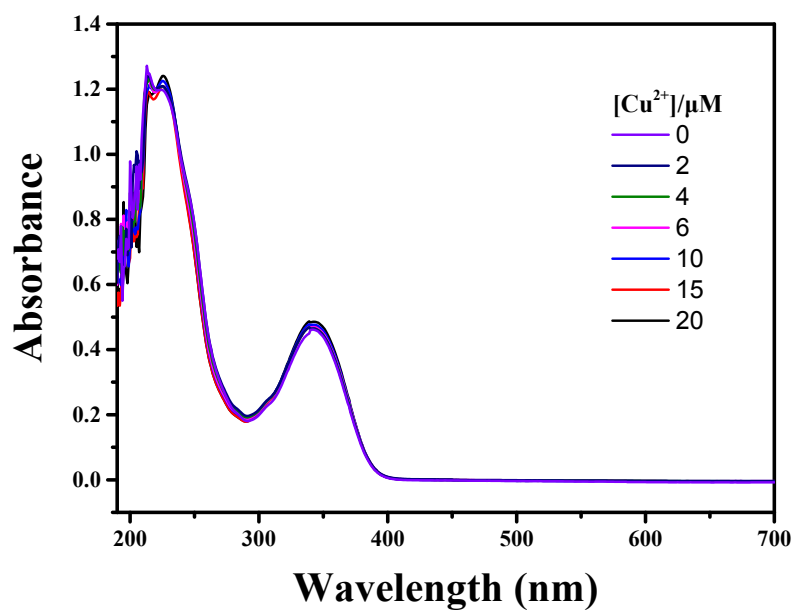


Fig. S5. UV/Vis spectra of TPE-COOH upon introduction of different amounts of Cu^{2+} in HEPES buffer (10 mM, pH 7.4). $[\text{TPE-COOH}] = 1.0 \times 10^{-5}$ mol/L.

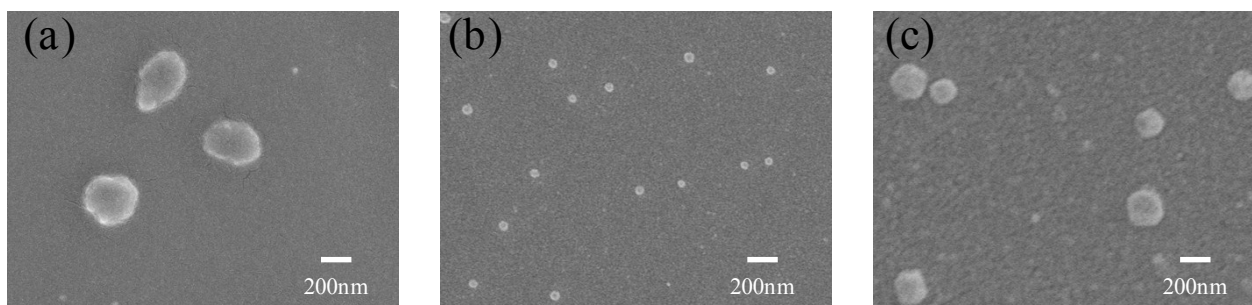


Fig. S6. Scanning electron microscope photographs of aggregates: (a) TPE-COOH; (b) TPE-COOH/ Cu^{2+} and (c) TPE-COOH/ Cu^{2+} -ATP.

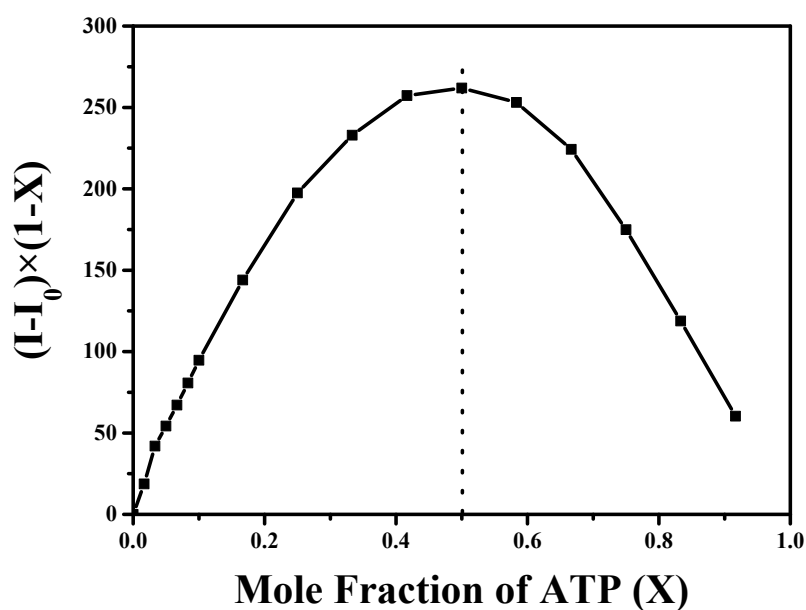


Fig. S7. Job's plot for determining the binding ratio of TPE-COOH/Cu²⁺ to ATP in HEPES buffer (10 mM, pH 7.4). The total concentration of TPE-COOH/Cu²⁺ and ATP is 20 μM.

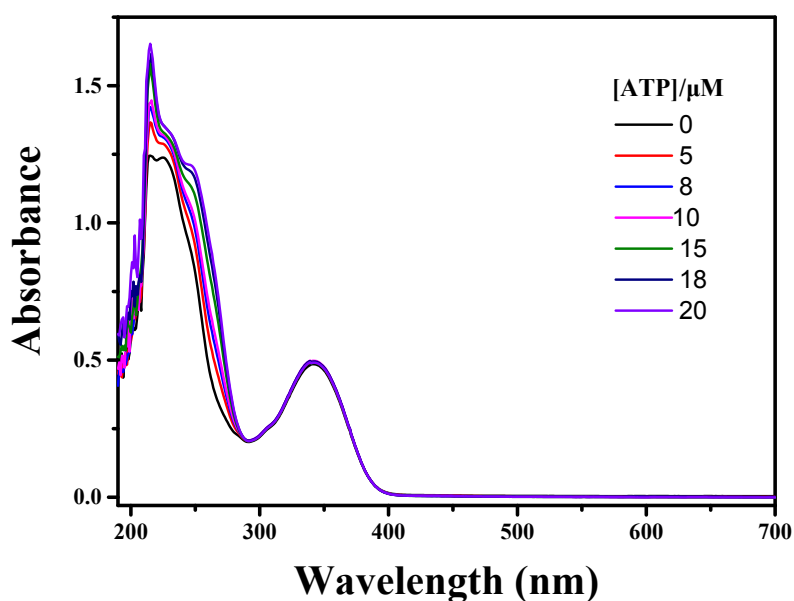


Fig. S8. UV/Vis spectra of TPE-COOH/Cu²⁺ upon introduction of different amounts of ATP in HEPES buffer (10 mM, pH 7.4). [TPE-COOH] = 1.0 × 10⁻⁵ mol/L; [Cu²⁺] = 2.0 × 10⁻⁵ mol/L.



Fig. S9. Photos of TPE-COOH/Cu²⁺ upon addition of various ions in HEPES buffer. [TPE-COOH/Cu²⁺] = 1.0×10⁻⁵ mol/L; [anion] = 2.0×10⁻⁵ mol/L; λ_{exc} = 365 nm.