

Supplementary data

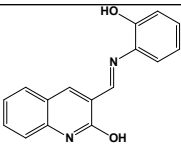
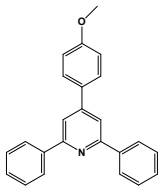
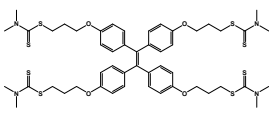
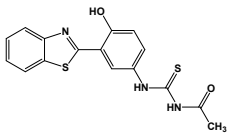
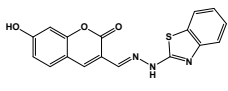
Probe	Water samples test	Cell imaging	Detection limit/M	Reference
	Yes	No	1.4×10^{-5}	Optical Materials, 2018, [57]
	No	Yes	6.2×10^{-6}	Dyes and Pigments, 2017, [58]
	No	No	8.7×10^{-7}	J. Photoch. Photobio. A, 2015,[59]
	Yes	No	7.6×10^{-7}	Dyes and Pigments, 2017, [26]
	No	Yes	6.1×10^{-7}	Sens. Actuators B: Chem, 2018, [60]
This work	Yes	Yes	1.74×10^{-7}	

Table S1 Comparison with other reported Ag⁺ fluorescence probes.

Supplementary data

Fig. S1. Absorbance spectra of probe **PPN** (10 μM) in the absence and presence of different metal ions (50 μM) in DMF/PBS buffer ($v/v = 5/5$, $\text{pH} = 7.4$).

Fig. S2. (A) Absorbance (at 360 nm) of probe **PPN** (10 μM) in the absence and presence of Cu^{2+} (50 μM) in DMF/PBS solution ($v/v = 5/5$, $\text{pH} = 7.4$) with different pH values. (B) Absorbance (at 360 nm) of probe **PPN** (10 μM) in the presence of Cu^{2+} (50 μM) in DMF/PBS solution ($v/v = 5/5$, $\text{pH} = 7.4$) with different response time.

Fig. S3. Fluorescence intensity ratios (F_{515}/F_{432}) of probe **PPN** (10 μM) in the presence of Ag^+ (100 μM) in DMF/PBS solution ($v/v = 5/5$, $\text{pH} = 7.4$) with different response time. $\lambda_{\text{ex}} = 340$ nm.

Fig. S4. Fluorescence spectra of probe **PPN** (10 μM) in the absence and presence of different metal ions (100 μM) in DMF/PBS buffer ($v/v = 5/5$, $\text{pH} = 7.4$).

Fig. S5. The fluorescence intensity of probe **PPN** (10 μM) with Ag^+ in DMF/PBS buffer ($v/v = 5/5$, $\text{pH} = 7.4$) at different time, $\lambda_{\text{ex}} = 340$ nm.

Fig. S6. (A) Job's plot for the determination of the stoichiometry of **PPN** and Ag^+ . (B) Job's plot for the determination of the stoichiometry of **PPN** and Cu^{2+} .

Fig. S7. ^1H NMR spectra of **PPN** (A) and in the presence of Ag^+ (B) and Cu^{2+} .

Fig. S8. HRMS-ESI spectra of **PPN**– Ag^+ (A) and **PPN**– Cu^{2+} (B).

Fig. S9. Molecular orbitals (LUMO and HOMO) of compounds **PPN** and **PPN**– Ag^+ .

Fig. S10. The linear relationship between the fluorescence intensity ratios (F_{515}/F_{432}) and Ag^+ concentration (1, 5, 10, 15, 20, 30 μM) in (A) lake water and (B) tap water and (C) distilled water samples. (D) Fluorescence intensity of probe **PPN** treatment with Ag^+ (1, 5, 10, 15, 20, 30 μM) in three water samples.

Fig. S11. MTT assay of Hela cells was incubated with 0.1, 1, 10, 20 and 50 μM probe PPN for 48 h.

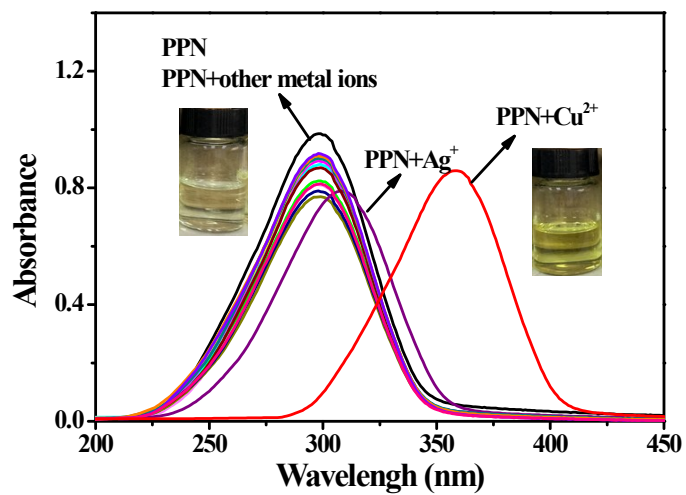
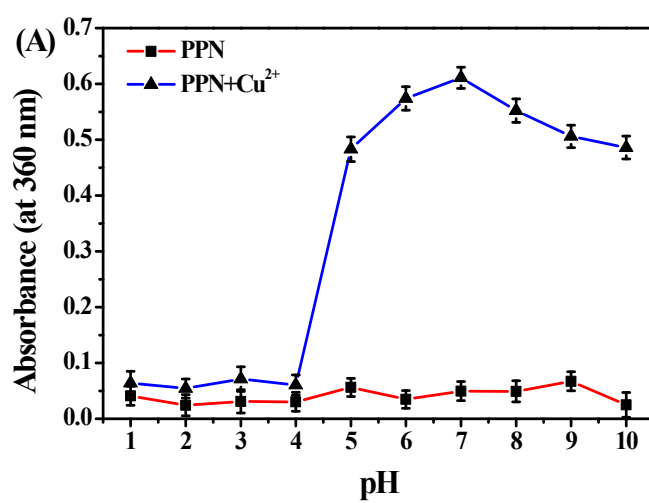


Fig. S1



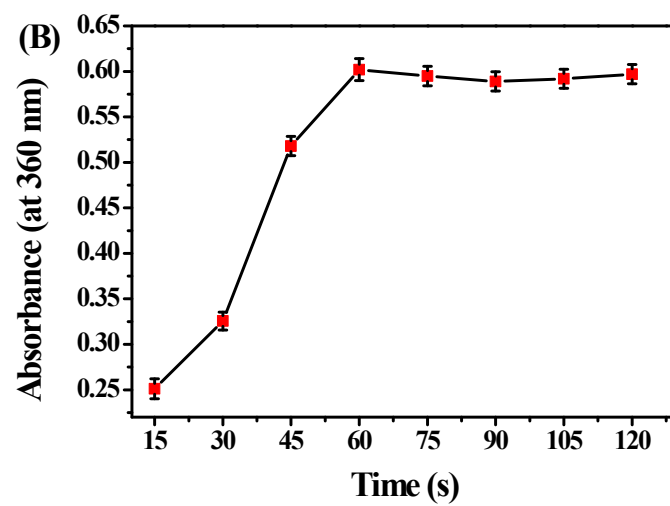


Fig. S2

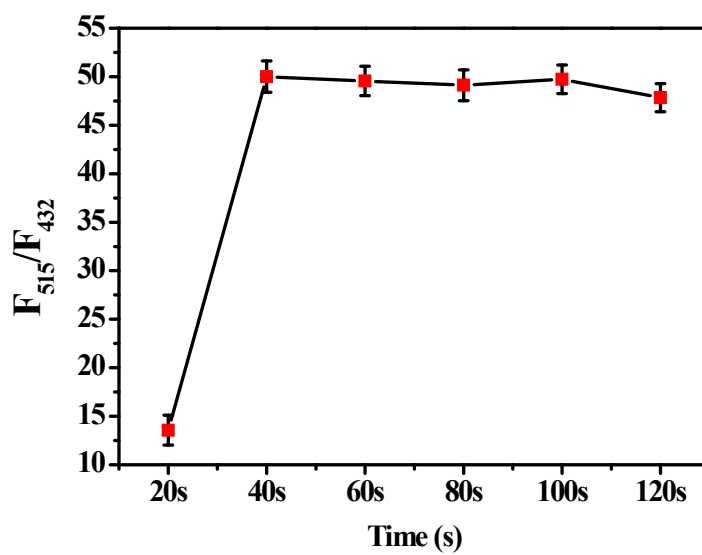


Fig. S3

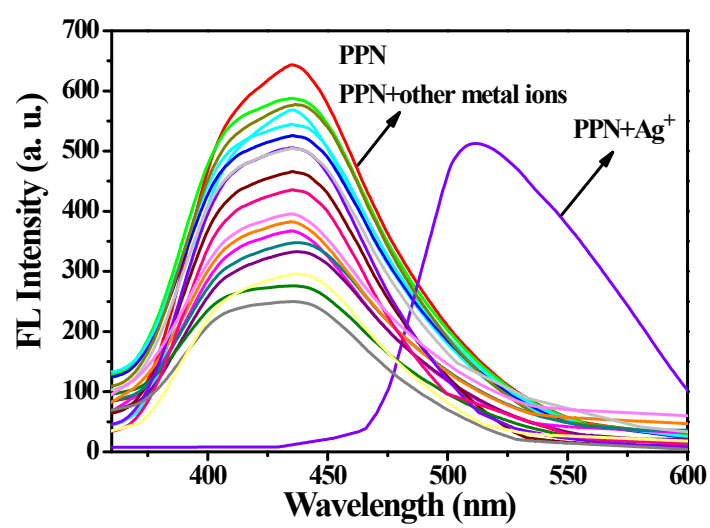


Fig. S4

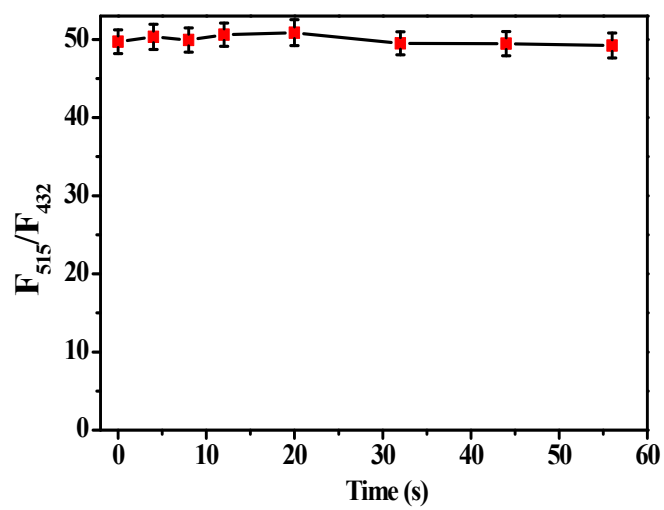


Fig. S5

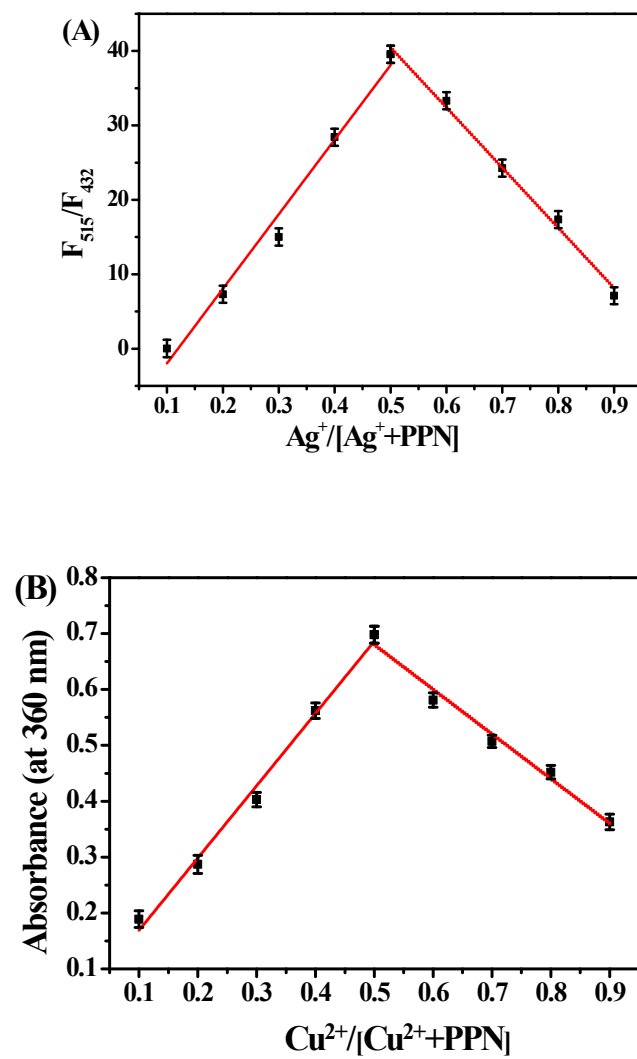


Fig. S6

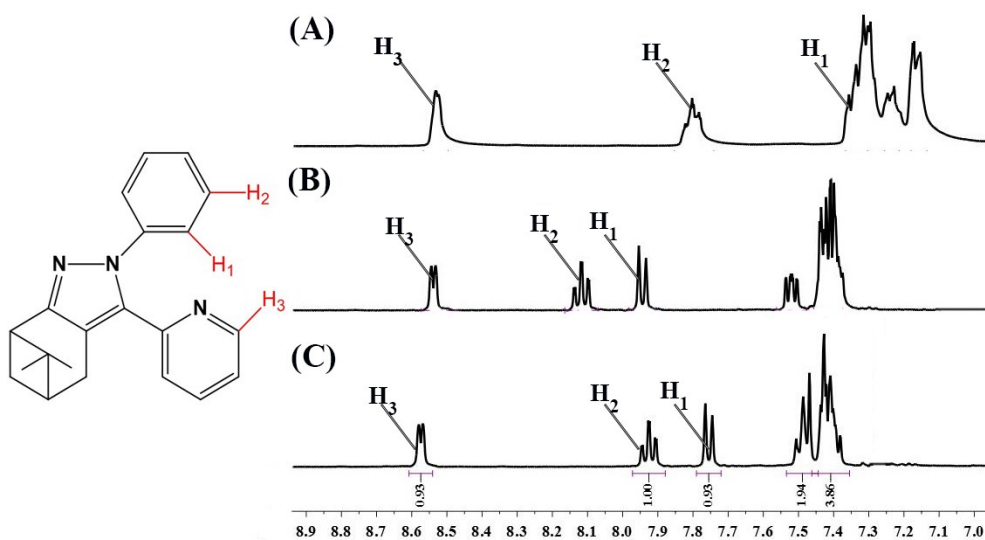


Fig. S7

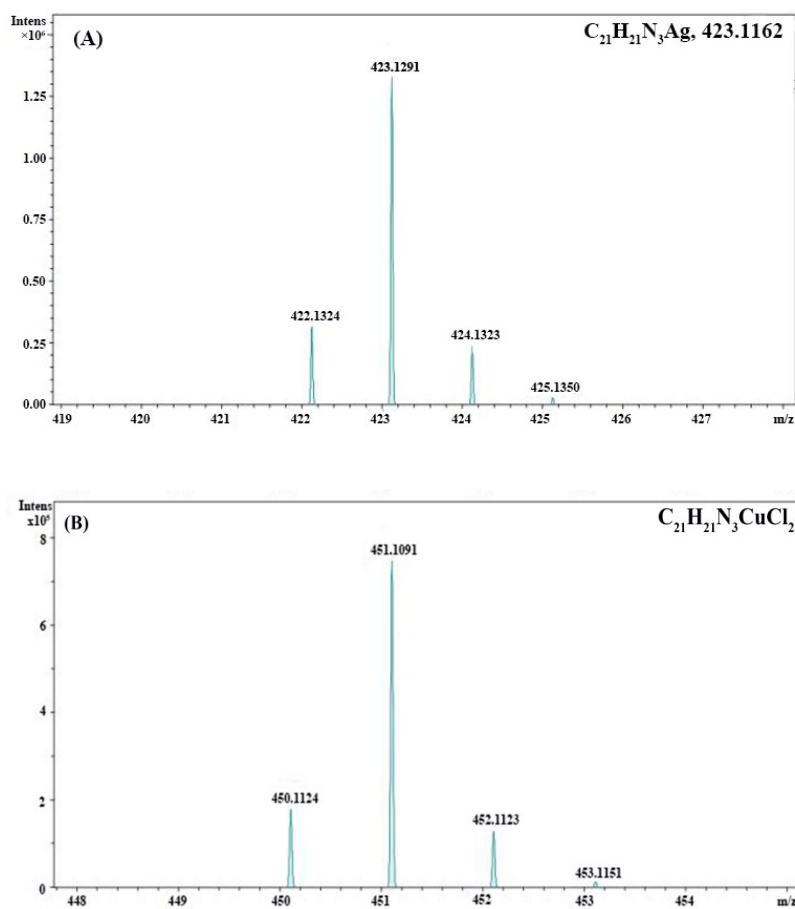


Fig. S8

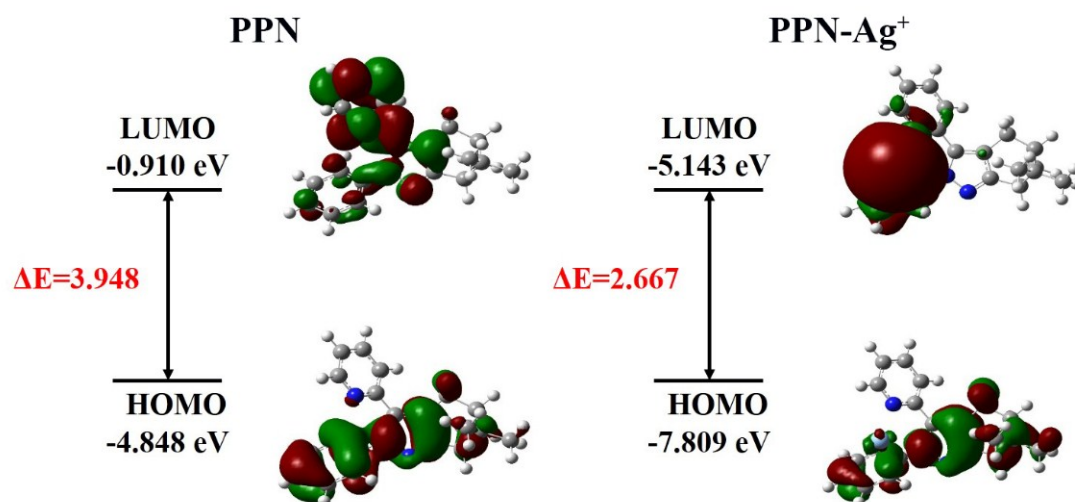


Fig. S9

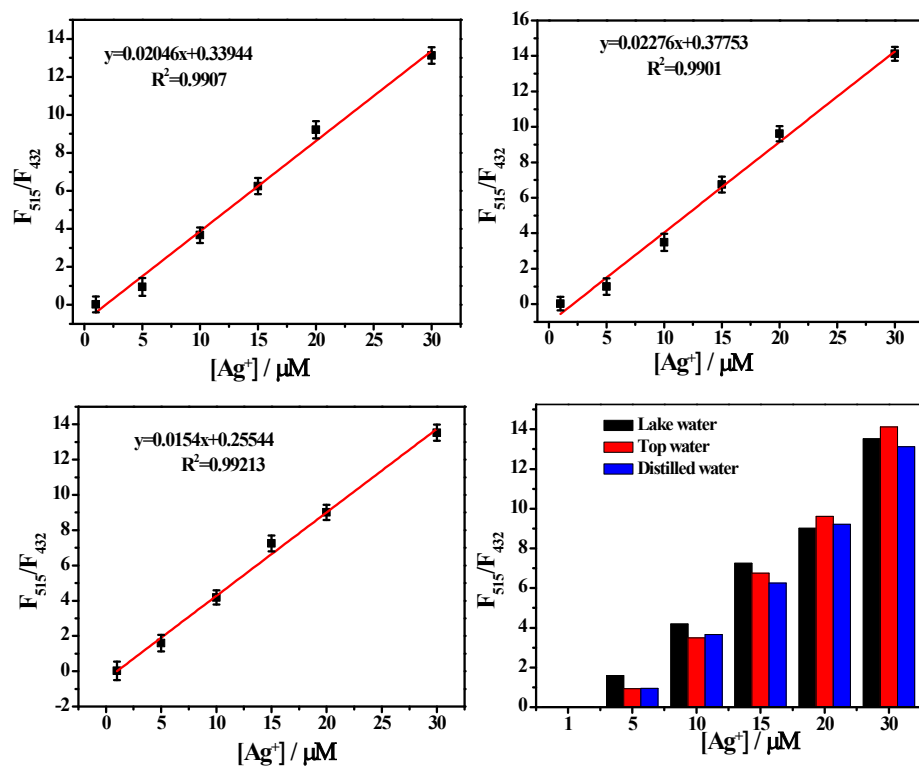


Fig. S10

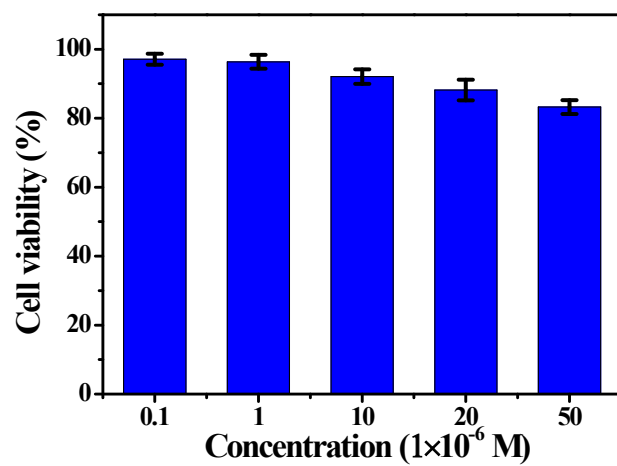


Fig. S11