Electronic Supplementary Material (ESI) for Analyst.

Supporting information

Barbituric acid-modified graphitic carbon nitride nanosheets for ratiometric fluorescent detection of Cu^{2+}

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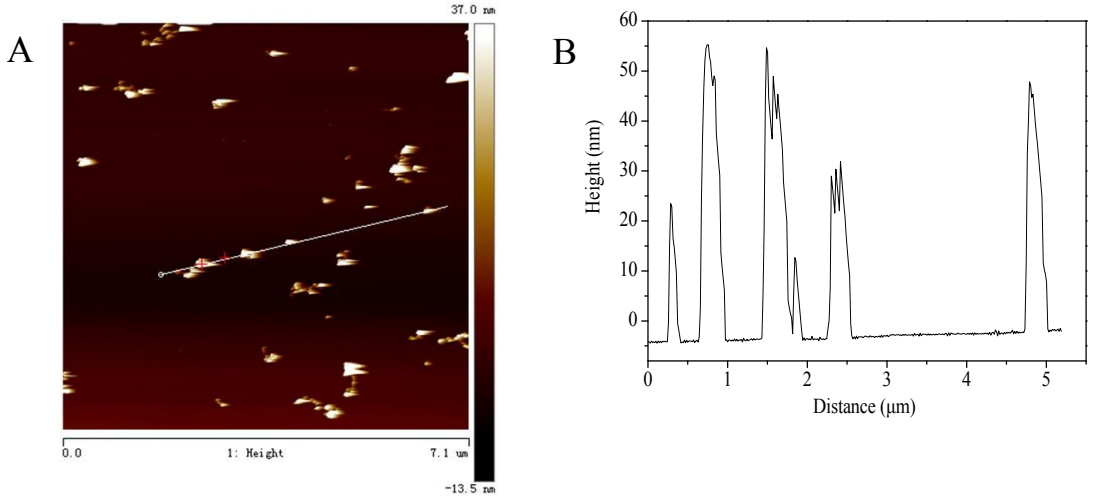

Figure S1. AFM image of BCN nanosheets (A) and corresponding height image (B).

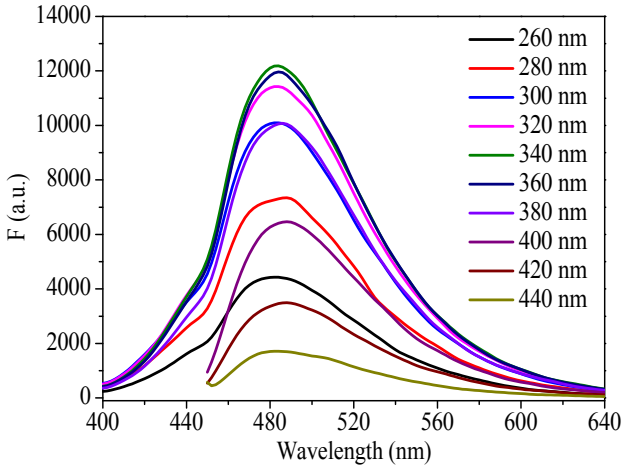

Figure S2. Fluorescence spectra of BCN nanosheets (0.161 mg/mL) with different excitation wavelength

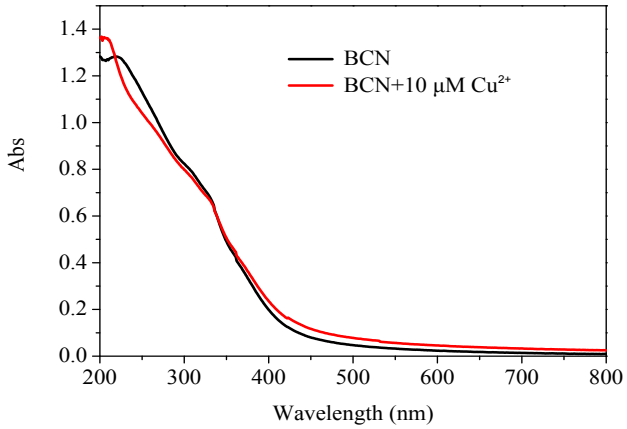

Figure S3. The UV-Vis spectra of BCN nanosheets (0.187 mg/mL) solutions before and after addition of Cu^{2+}.

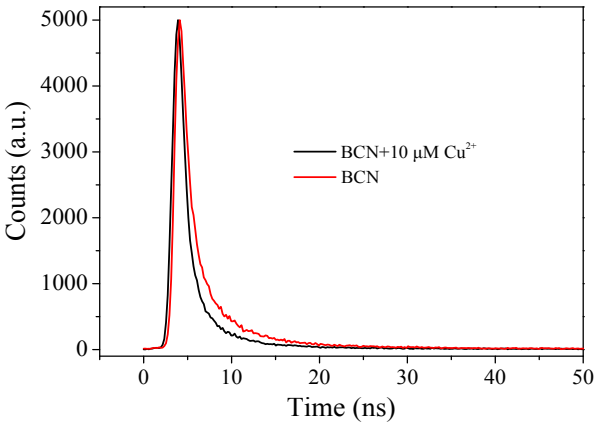

Figure S4. The decay curves of BCN nanosheets (0.187 mg/mL) in the absence and presence of 10 μM Cu^{2+}. The decay curves were recorded at the maximal emission peak (488 nm) with the excitation wavelength of 325 nm.

Table S1. Fluorescence lifetime parameters of BCN nanosheets (0.187 mg/mL) in the absence and presence of 10 μM Cu^{2+}

	τ_1/ns	Rel%	τ_2/ns	Rel%	τ_3/ns	Rel%	χ^2	$\tau_{average}$/ns
BCN nanosheets	0.94	30.63	3.30	44.15	10.10	25.22	0.97	4.29
BCN nanosheets and Cu^{2+}	0.96	50.87	3.46	32.22	8.52	16.91	1.12	3.04

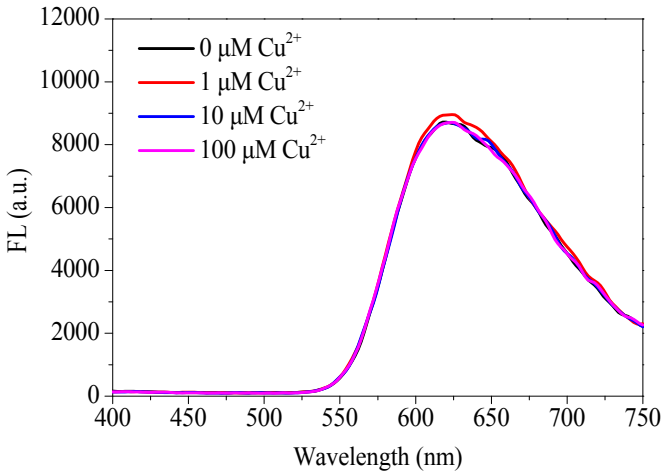

Figure S5. Emission spectra of $Ru(bpy)_3Cl_2$ (4.025 μg/mL) on adding of different concentration of Cu^{2+}

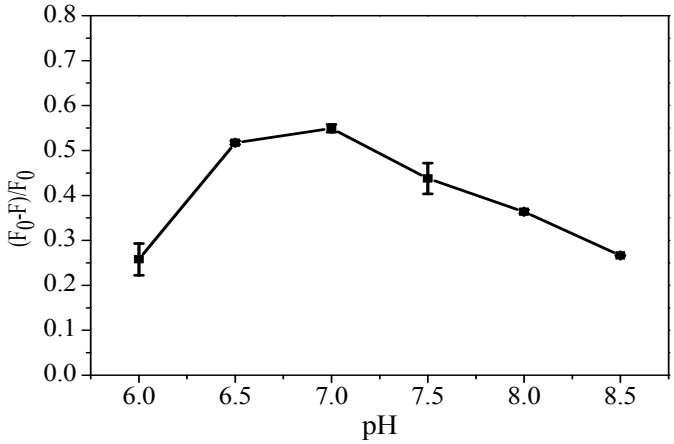

Figure S6. Effect of pH on the ratio of fluorescence quenching of BCN nanosheets (BCN nanosheets:0.187 mg/mL; Cu^{2+}: 10 μM)

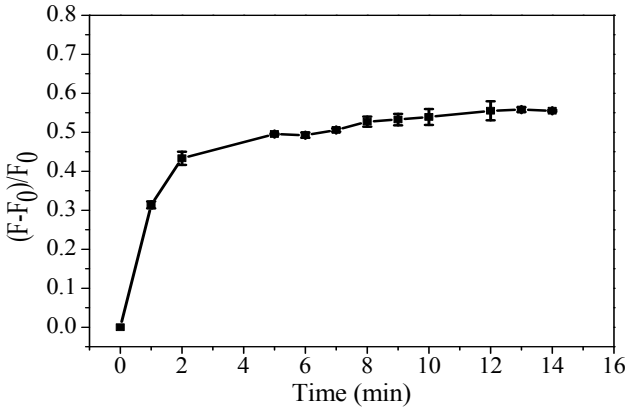

Figure S7. Effect of incubation time on the ratio of fluorescence quenching of BCN nanosheets (BCN nanosheets:0.187 mg/mL; Cu^{2+}: 10 μM)

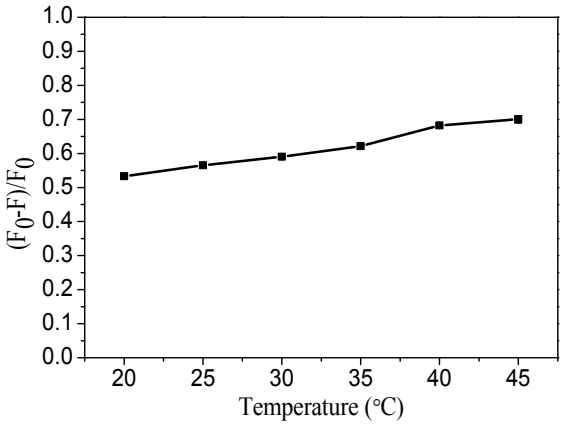

Figure S8. Effect of temperature on the ratio of fluorescence quenching of BCN nanosheets (BCN nanosheets:0.187 mg/mL; Cu^{2+}: 10 μM)

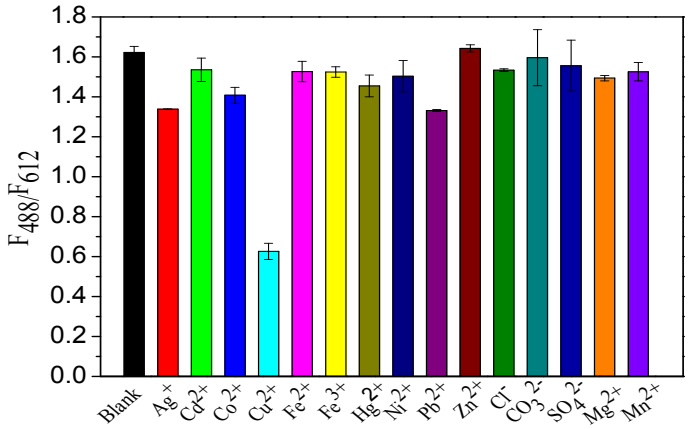

Figure S9. The ratio of fluorescence intensity (F_{488}/F_{612}) of the probe on addition of different cations and anions (all ions were 10 μM).