Supporting Information of

Synthesis of fluorescent boron carbon nitride nanosheets for the detection of Cu^{2+} ion and epinephrine

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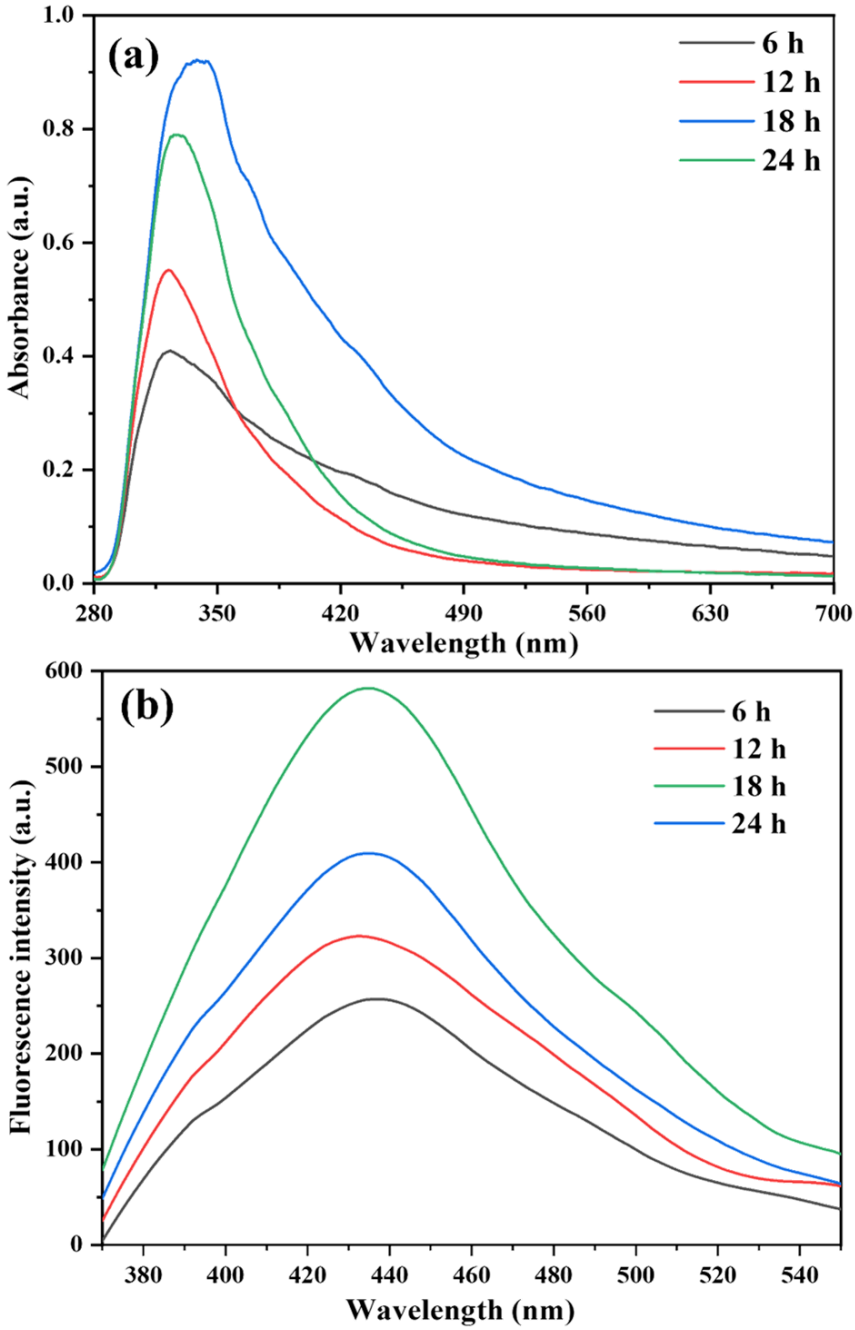

Figure S1. (a) Absorbance and (b) fluorescence emission spectra of BCNNSs at different reaction times from 6, 12, 18, and 24 h.

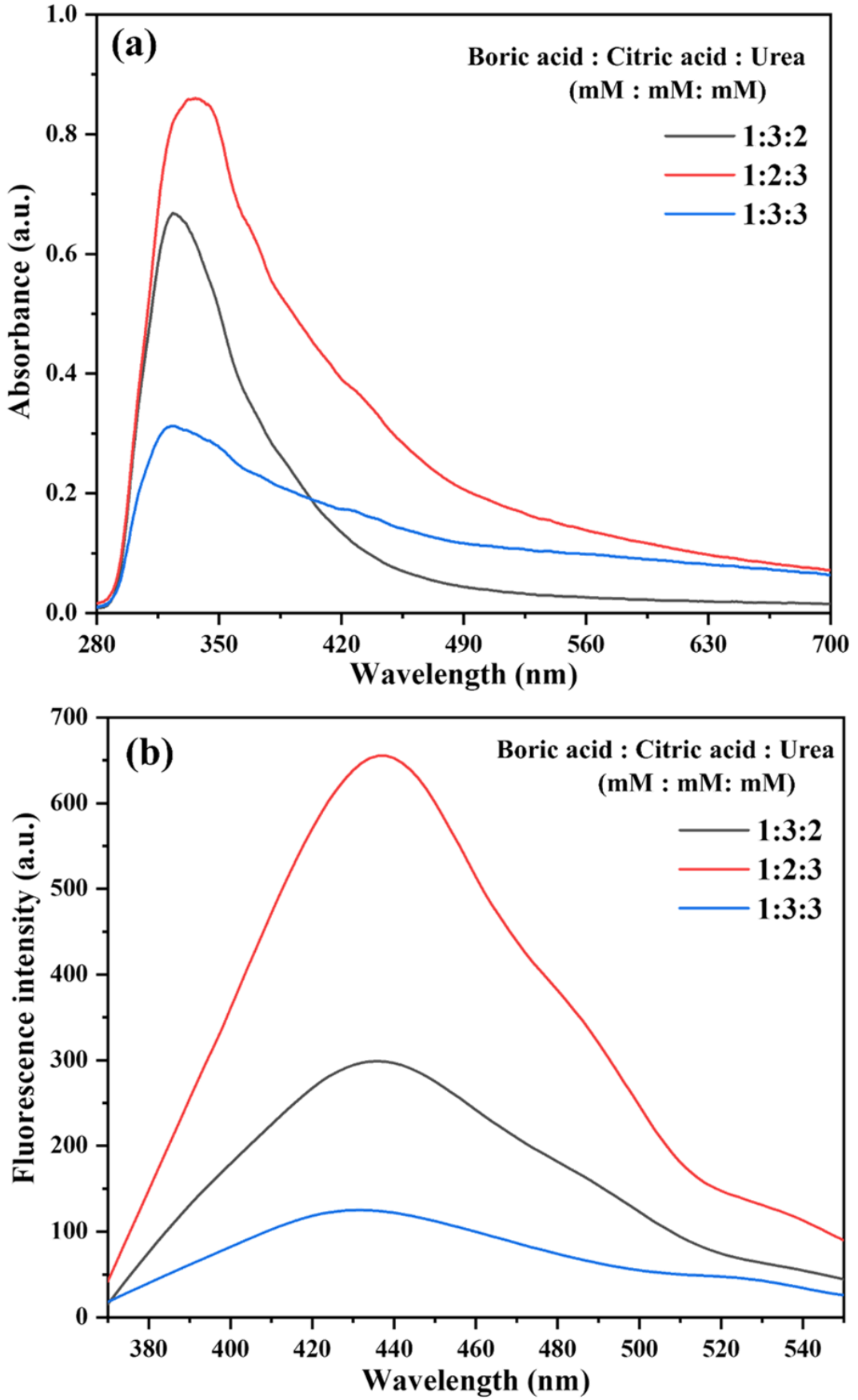

Figure S2. (a) Absorbance and (b) fluorescence emission spectra of BCNNSs at different molar ratios of boric acid: citric acid: urea (1:3:2, 1:2:3, and 1:3:3, mM:mM:mM).

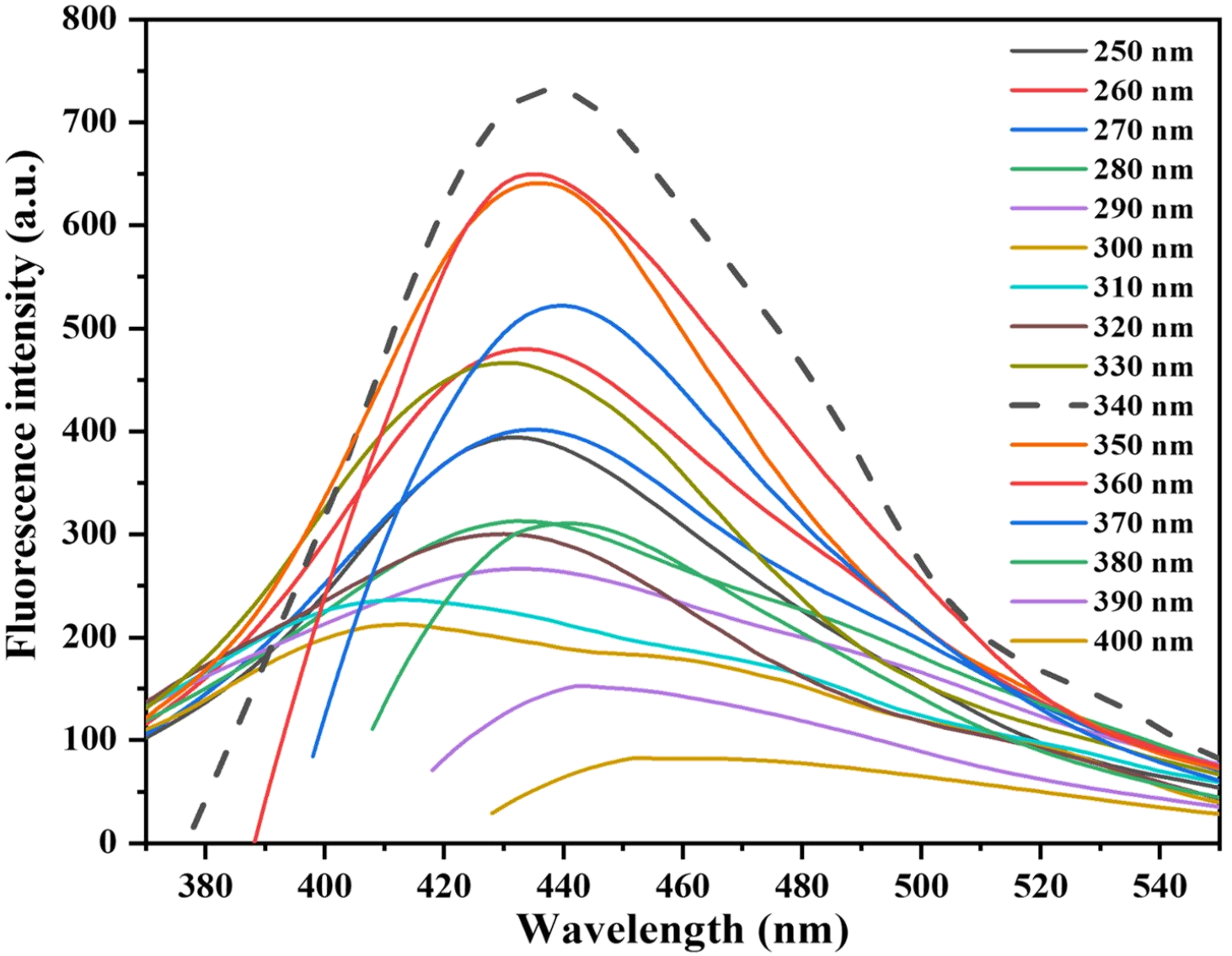

Figure S3. Fluorescence emission spectra of BCNNSs at various excitation wavelengths ranging from 250 to 400 nm.

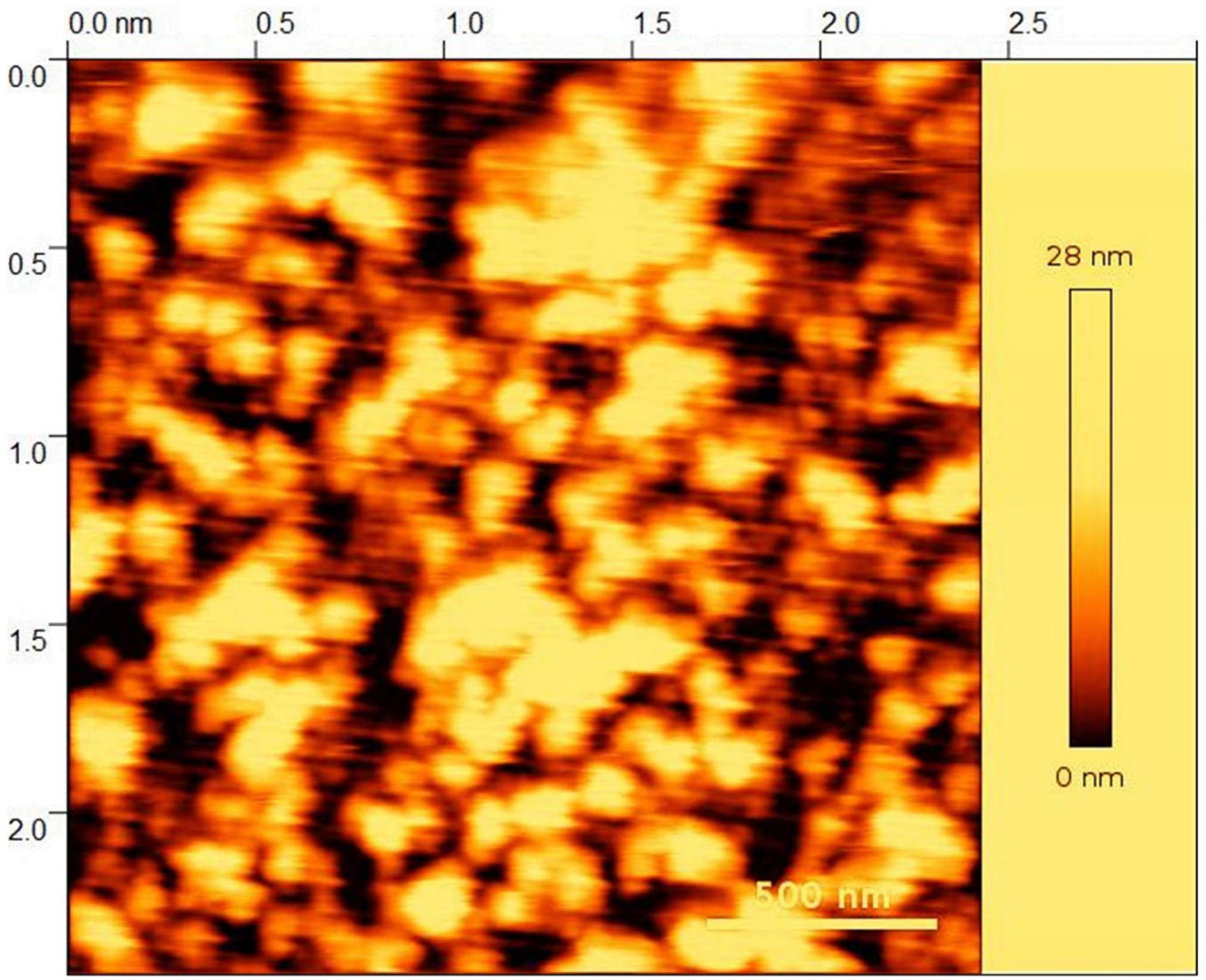

Figure S4. AFM image of BCNNSs.

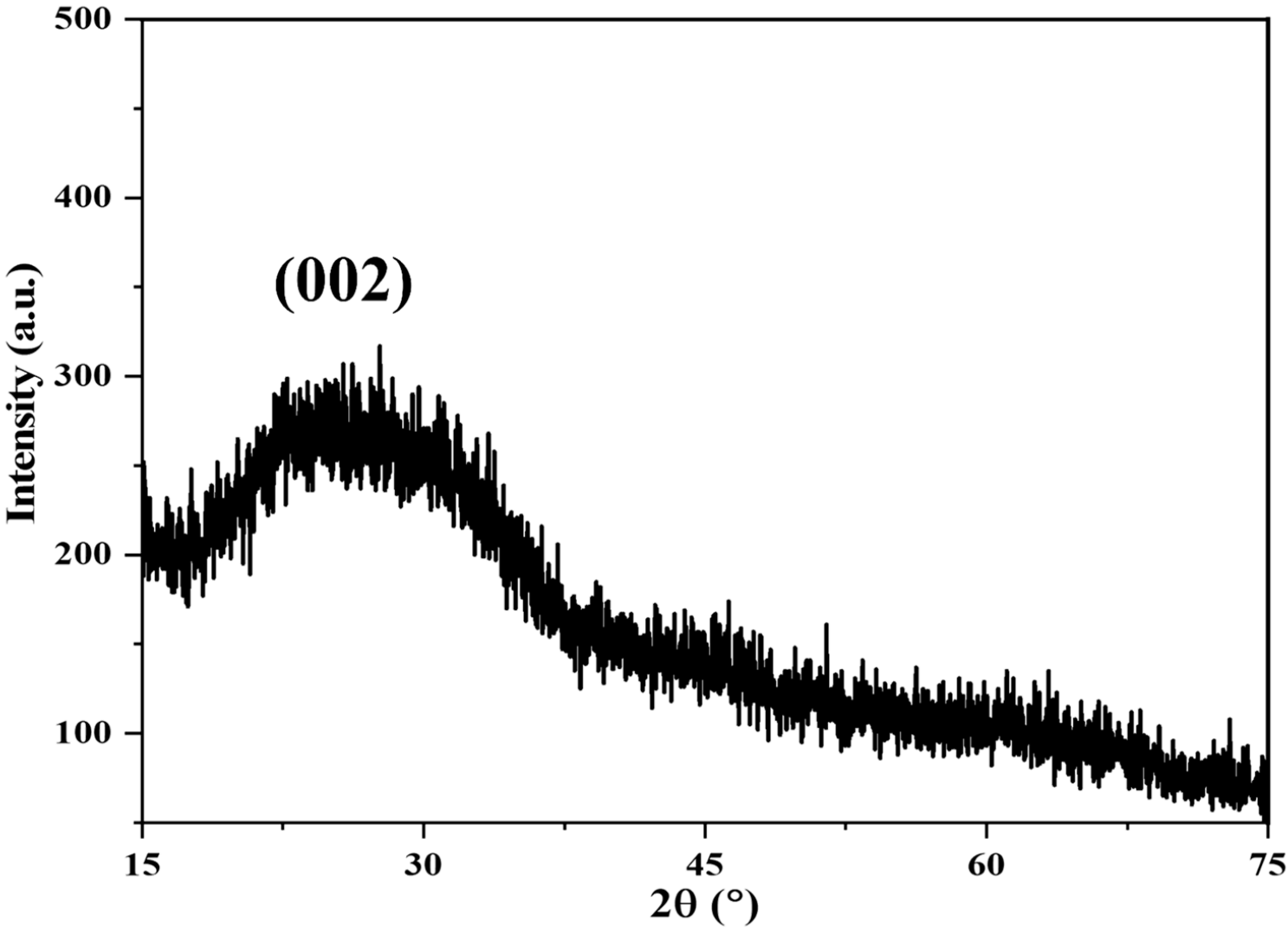

Figure S5. The XRD pattern of BCNNSs.

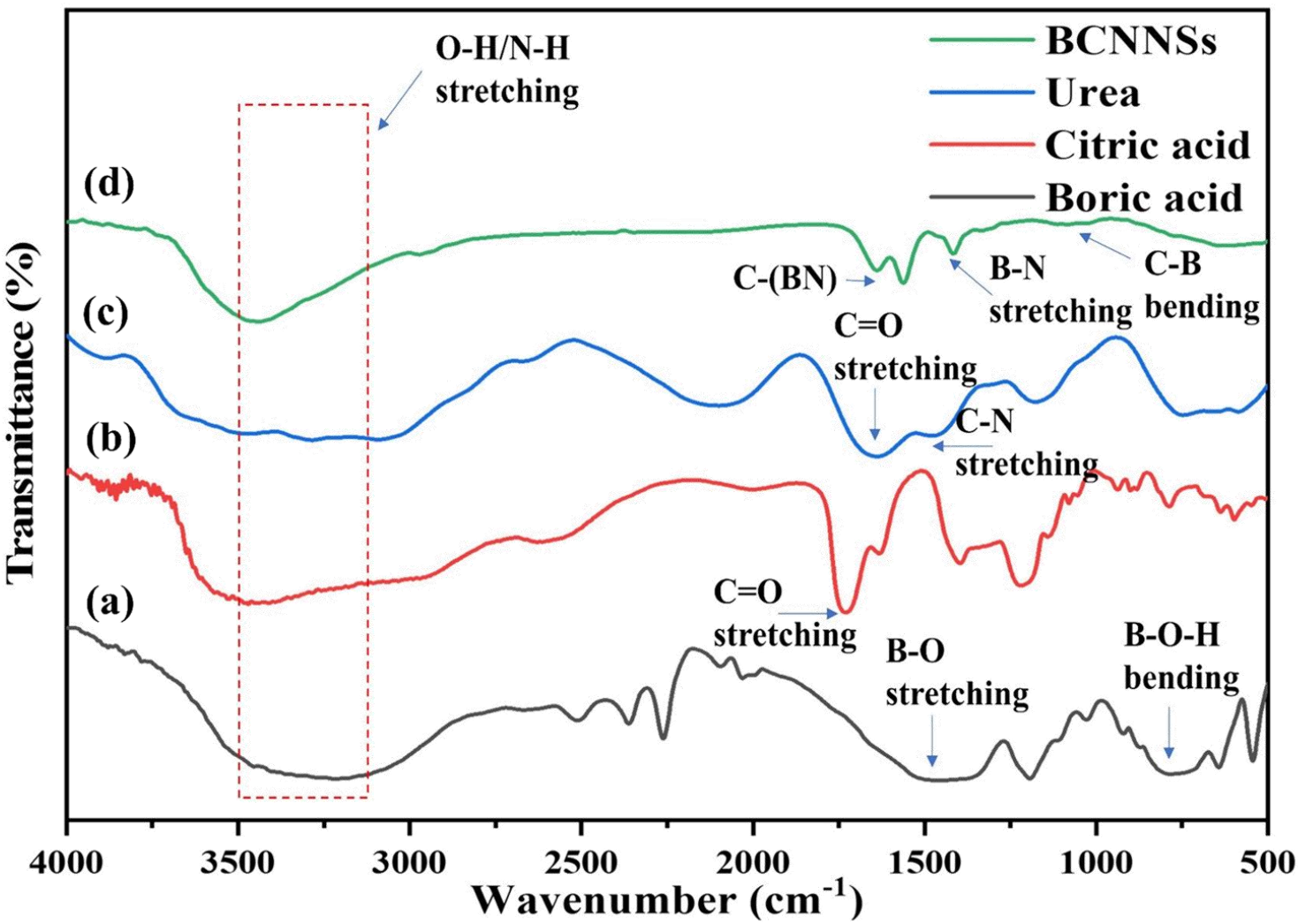

Figure S6. FT-IR spectra of (a) boric acid, (b) citric acid, (c) urea and (d) BCNNSs.

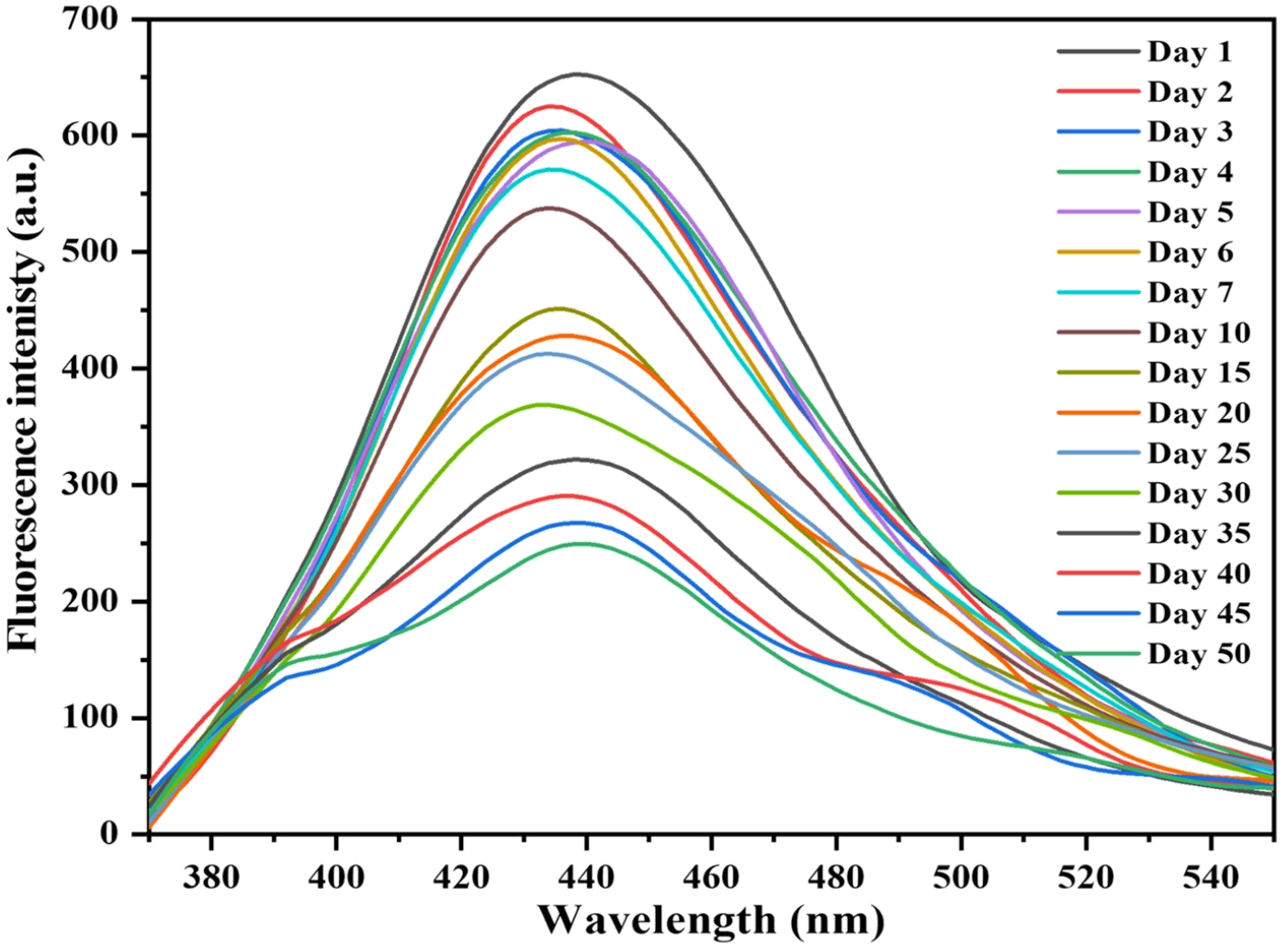

Figure S7. The stability study of BCNNSs from Day 1–50.

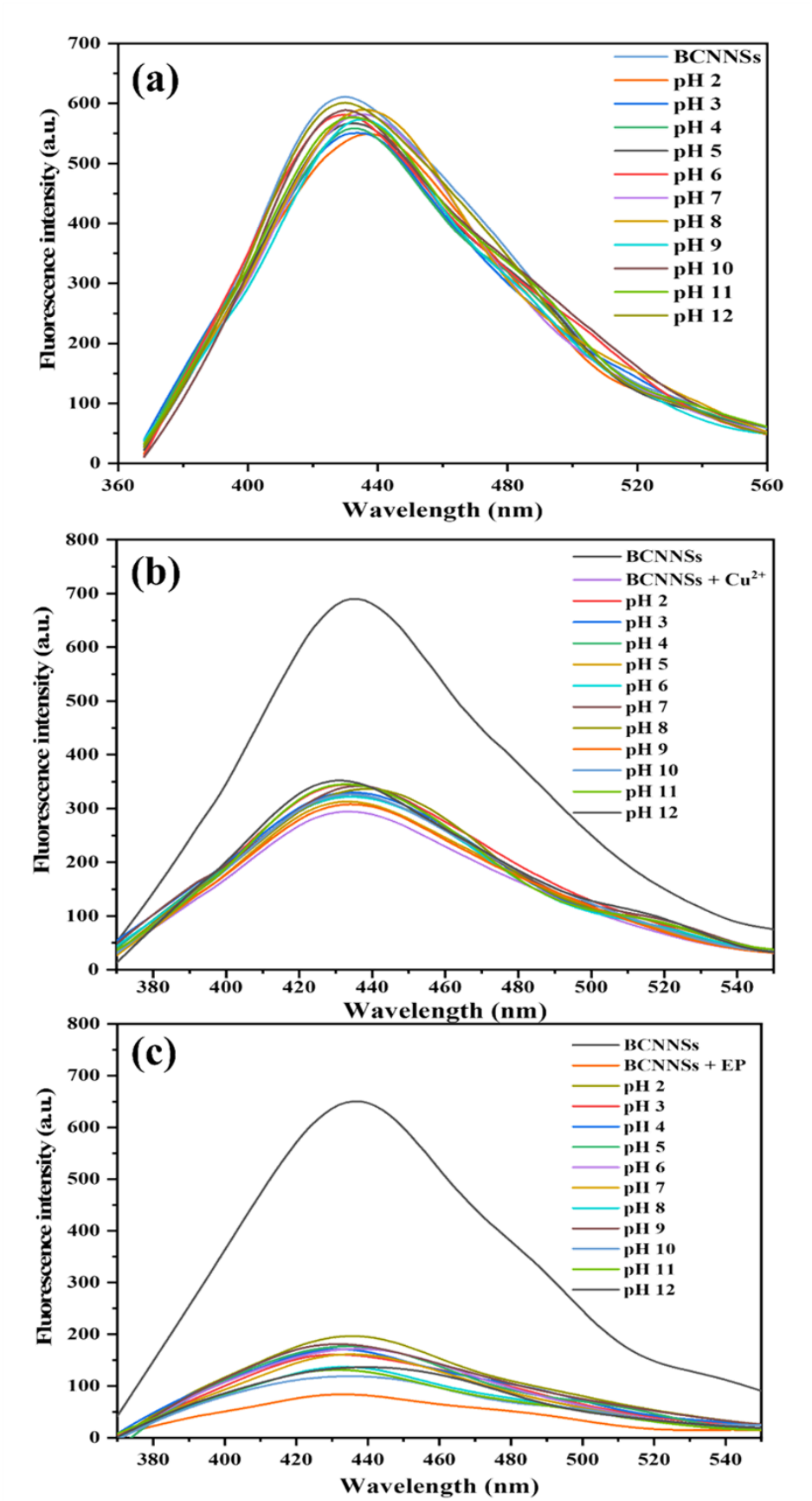

Figure S8. Effect of pH on the fluorescence emission intensity of (a) BCNNSs, (b) with Cu^{2+}, and (c) with EP in the presence of PBS pHs from 2.0 to 12.

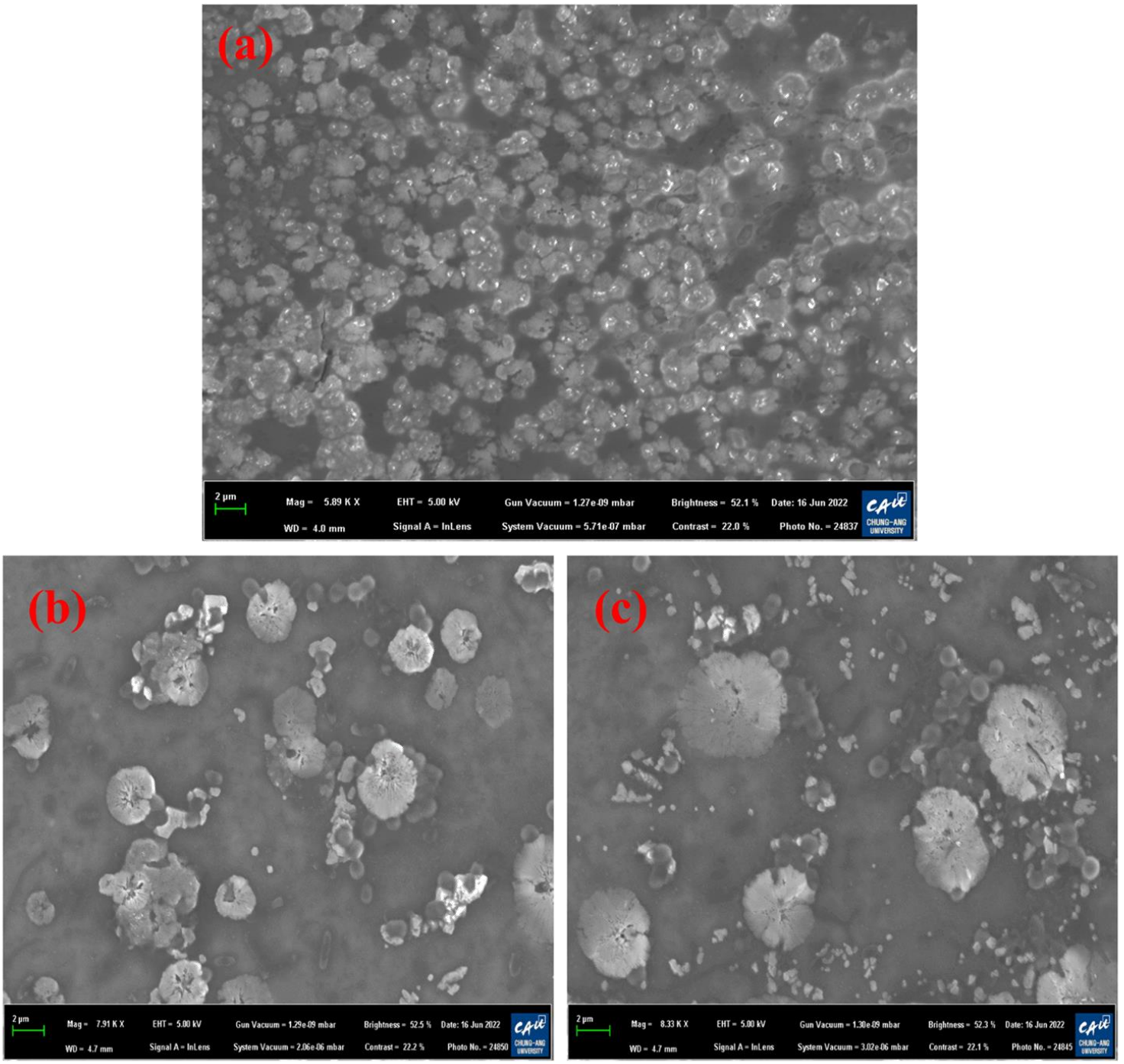

Figure S9. FE-SEM images of (a) BCNNSs, (b) BCNNSs with Cu^{2+}, and (c) BCNNSs with EP.

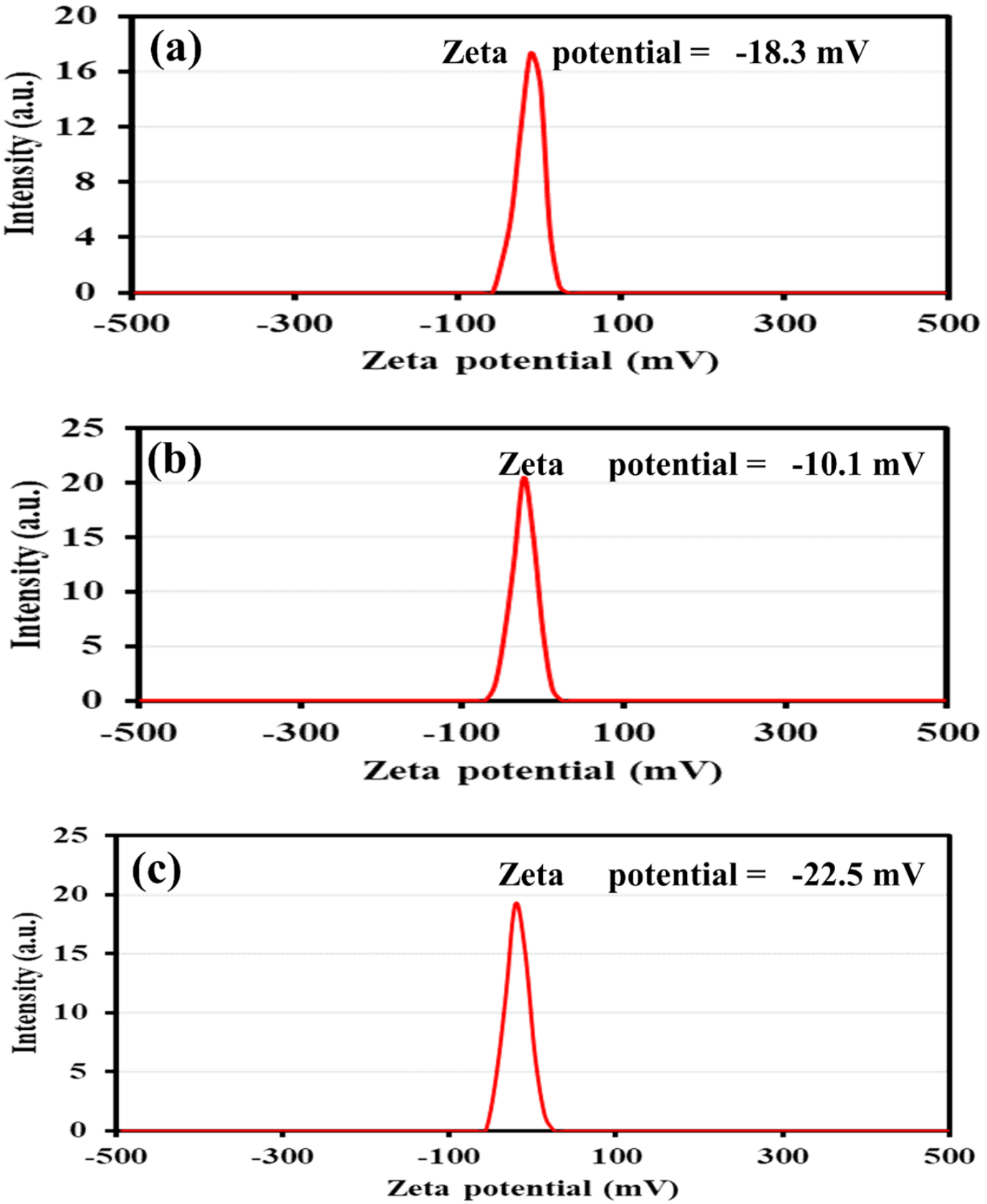

Figure S10. Zeta potentials of (a) BCNNSs (b) BCNNSs + Cu^{2+} and, (c) BCNNSs + EP .

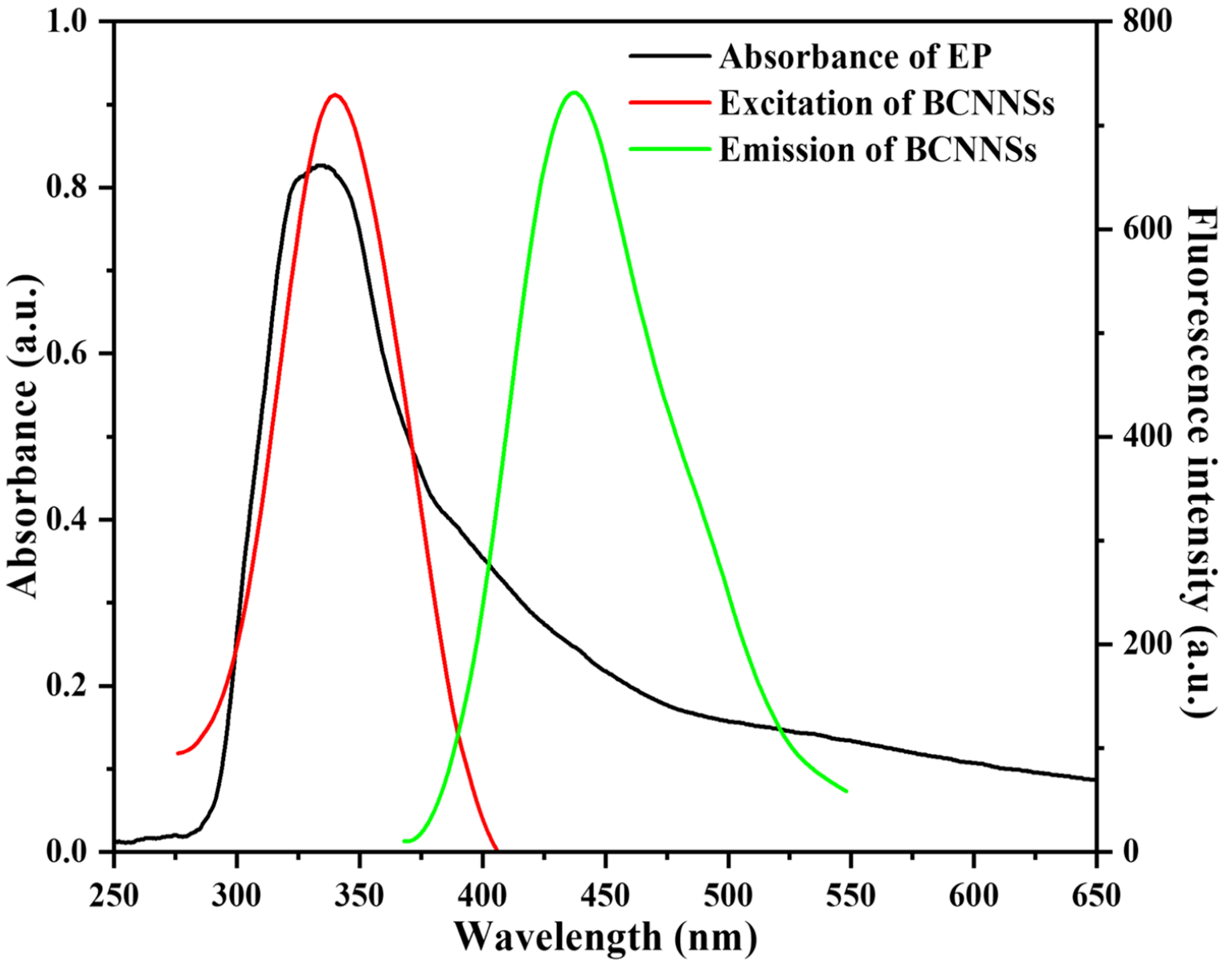

Figure S11. Absorbance spectra of EP. Excitation and emission spectra of BCNNSs.

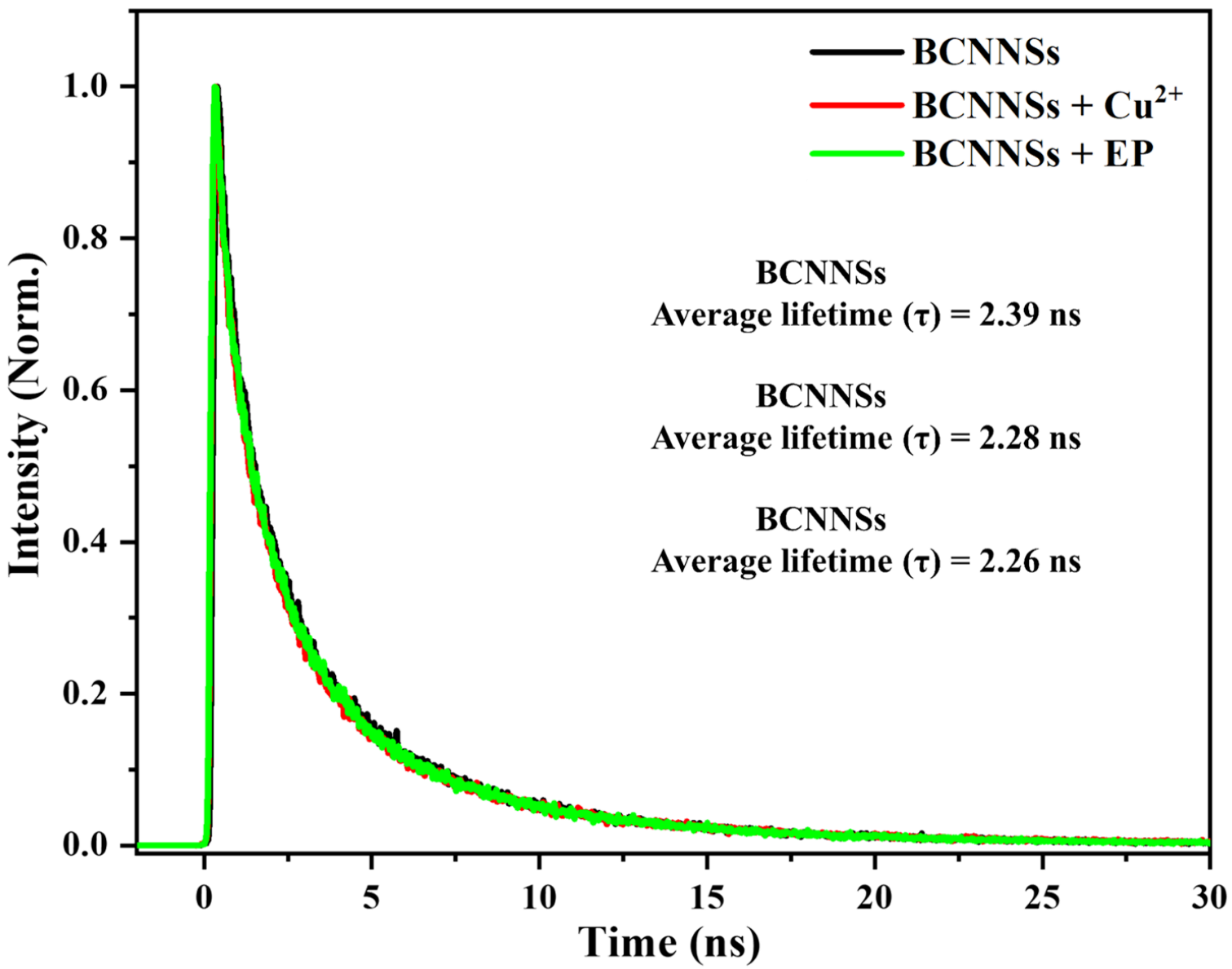

Figure S12. Lifetime analysis of BCNNSs, BCNNSs + Cu^{2+}, and BCNNSs + EP.

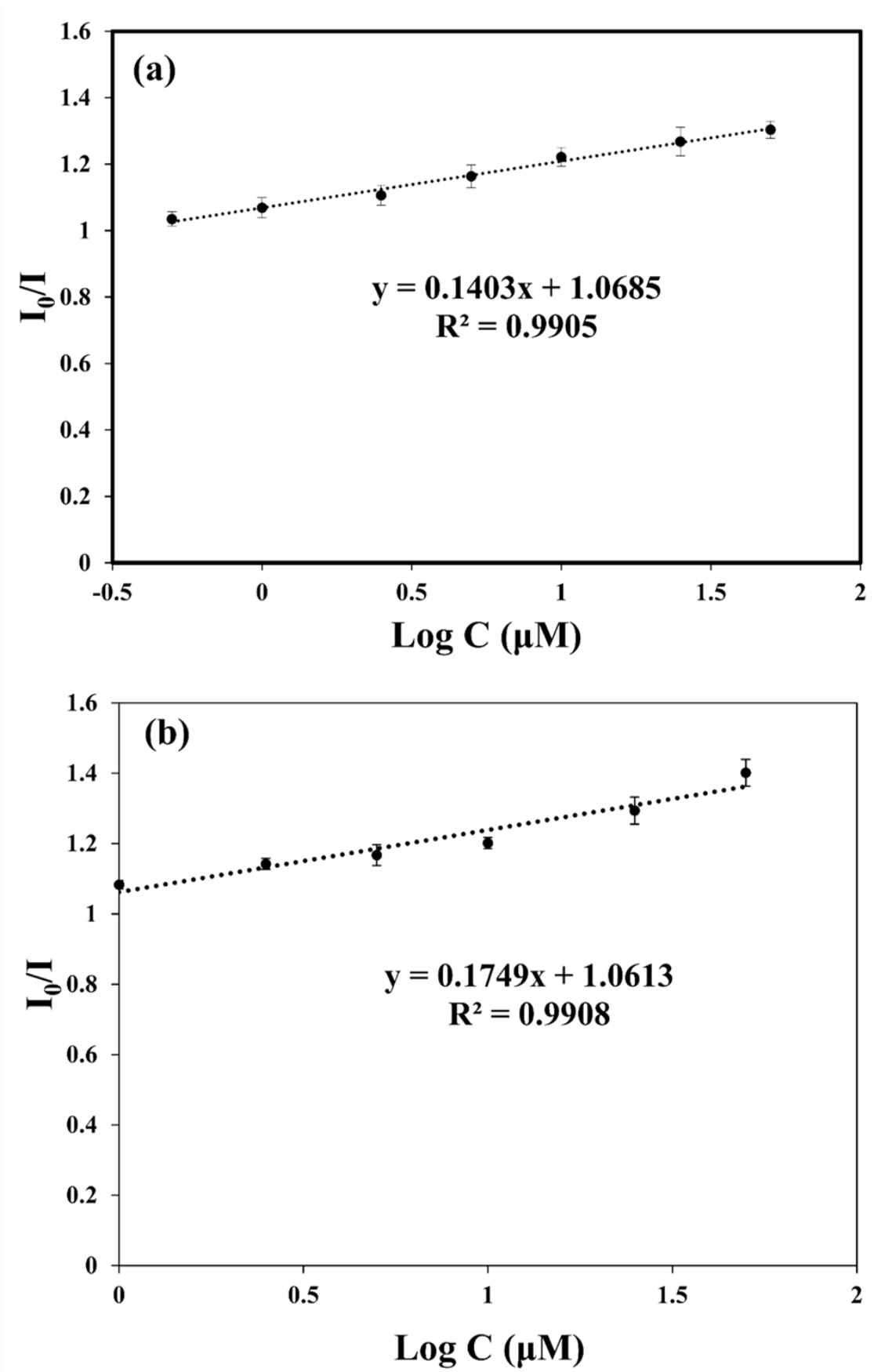

Figure S13. Calibration curves constructed between the fluorescence emission ratio (I_0/I) of BCNNSs at 436 nm and the concentrations of (a) Cu^{2+} (0.5–50 μM), and (b) EP (1.0–50 μM).

Table S1. Application of BCNNSs as a fluorescence sensing probe for the analysis of Cu^{2+} in water samples (tap and industrial) and EP in pharmaceutical sample.

Sample	**Cu^{2+} ions**			
	Added (µM)	**Found (µM)**	**Recovery (%) (n=3)**	**RSD (%)**
Tap water	0.5	0.49	99.05	0.72
	1.0	0.98	99.56	0.75
	2.5	2.46	98.42	0.74
Industrial water	0.5	0.49	99.75	0.96
	1.0	0.99	99.07	0.57
	2.5	2.46	98.60	0.61
	EP			
Pharmaceutical sample	-	0.98	98.05	0.48
	-	2.48	99.56	0.71
	-	4.98	99.69	1.63