

Electronic Supplementary Information

One-pot Synthesis of Carbon Nanodots@Zeolitic Imidazolate Framework-8 Composite for Enhanced Cu²⁺ Sensing

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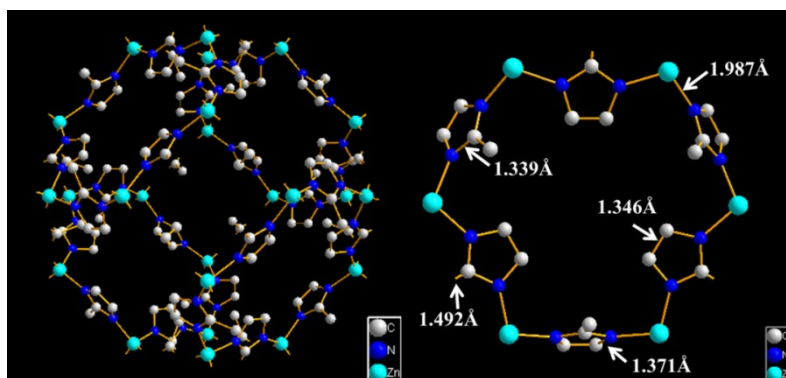


Figure S1 Coordination mode for the H-MeIM ligand in ZIF-8.

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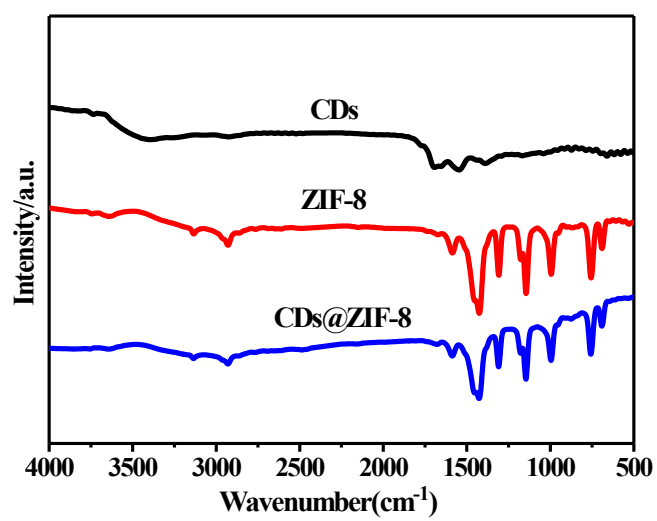


Figure S2 FT-IR spectra of CDs, ZIF-8 and CDs@ZIF-8.

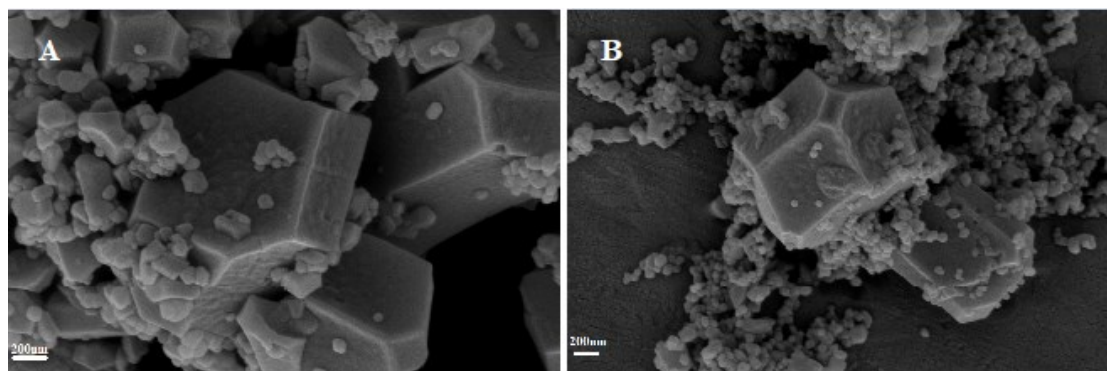


Figure S3 SEM images of ZIF-8 and CDs@ZIF-8.

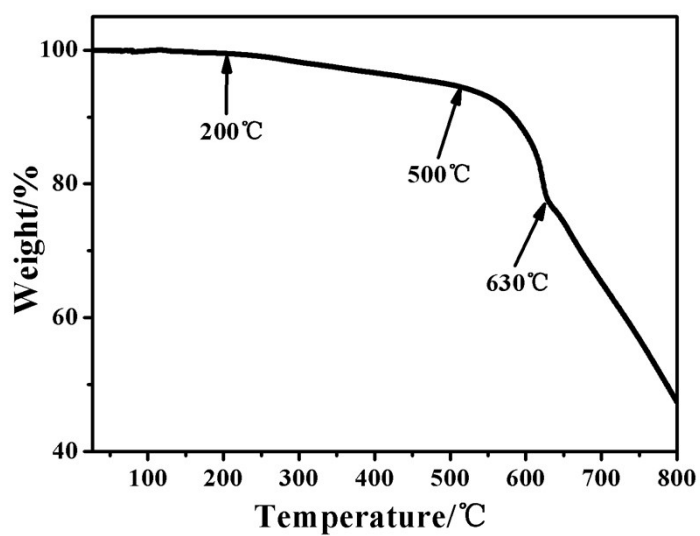


Figure S4 TGA curve of CDs@ZIF-8

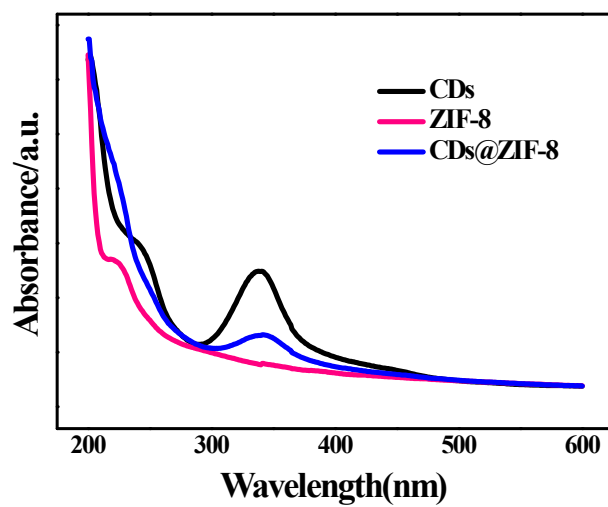


Figure S5 UV-vis absorption spectra of the CDs(blank), ZIF-8(pink) and CDs@ZIF-8(blue).

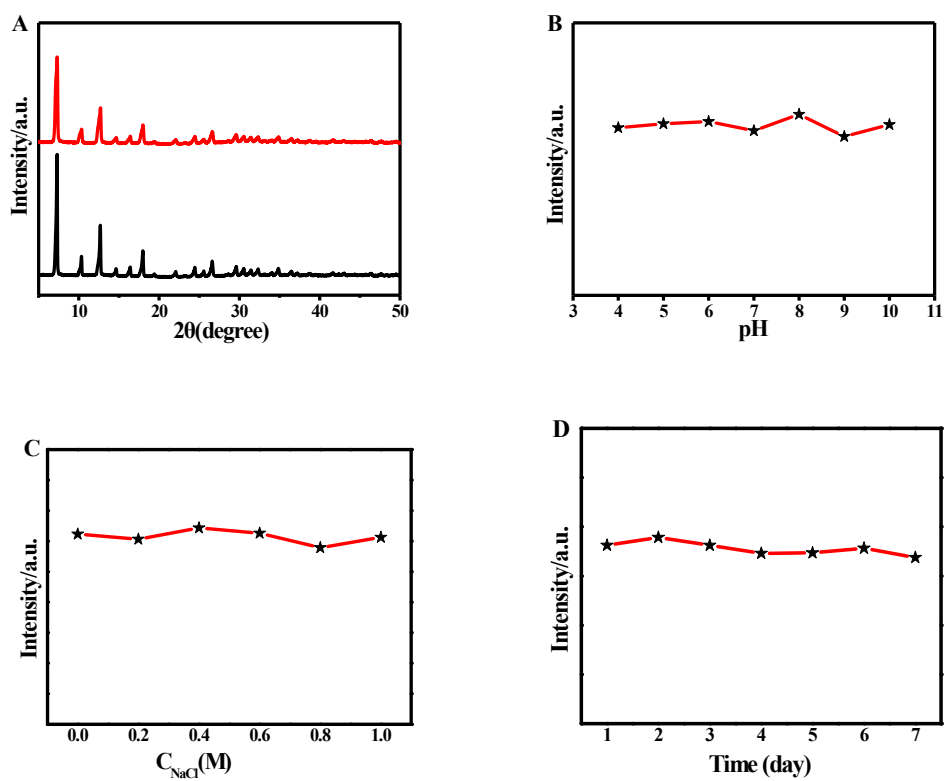


Figure S6 (A) XRD patterns of CDs@ZIF-8 of as-synthesized (black line) and after treatment in H₂O at 373 K (red line) for 24 h. The FL intensities of CDs@ZIF-8 at different pH (B), in different concentrations of NaCl (C) of different storage days (D)

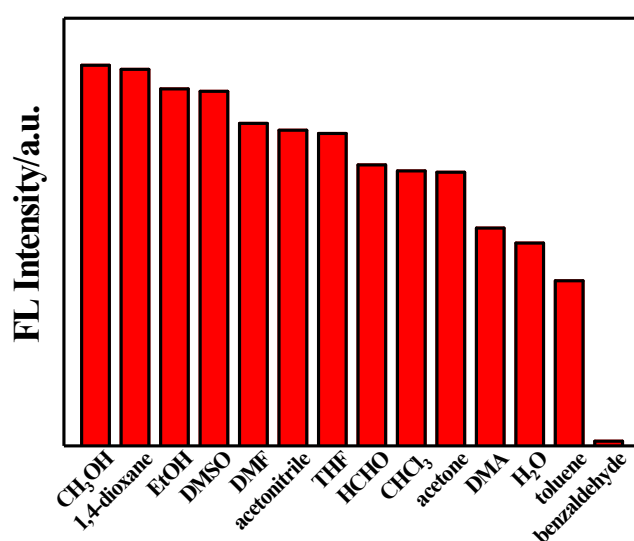


Figure S7 Fluorescent intensities of CDs@ZIF-8 in different organic solvents.

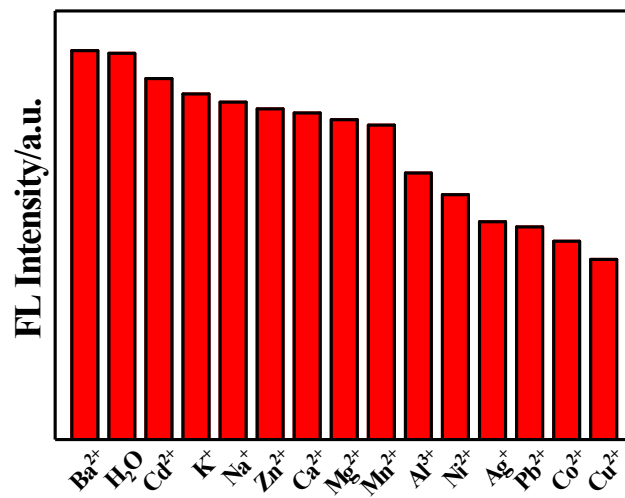


Figure S8 Fluorescent intensities of CDs in the presence of different metal ions.

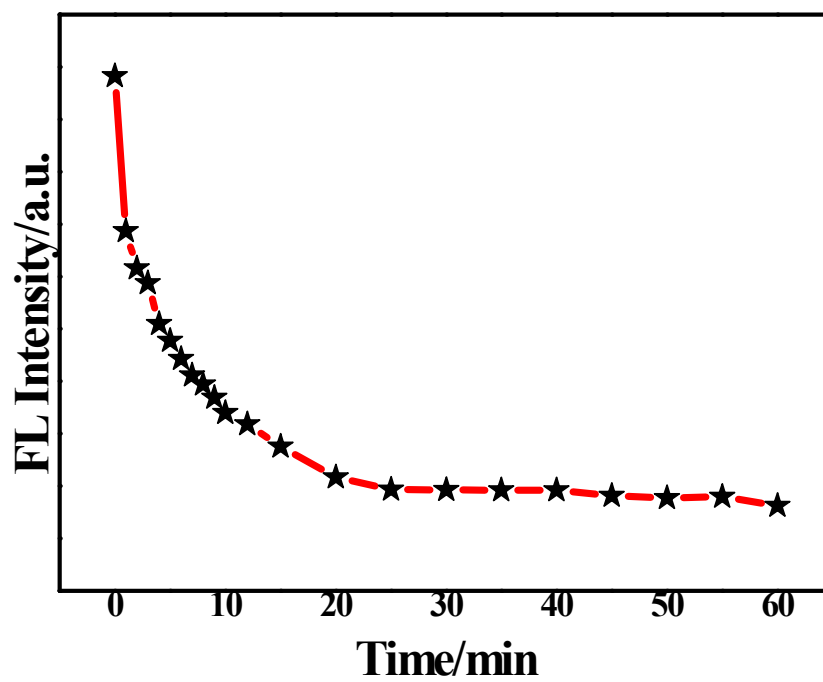


Figure S9 The dependence of FL response of CDs@ZIF-8 on reaction time.

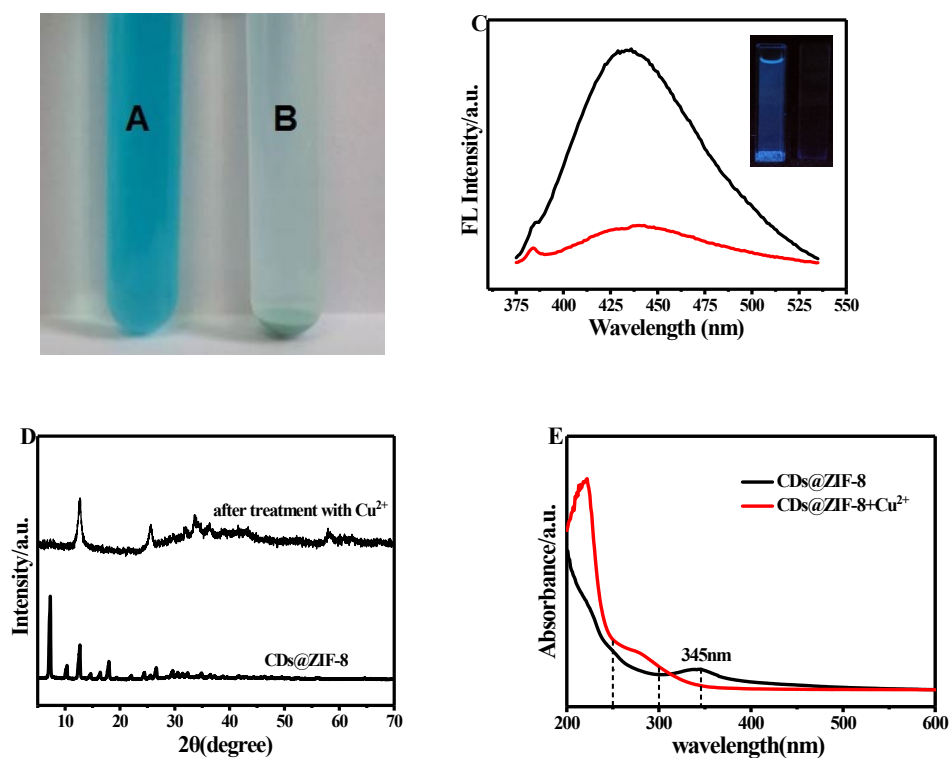


Figure S10 Cu²⁺ solution before (A) and after (B) adding CDs@ZIF-8. (C) Fluorescence spectra of the CDs@ZIF-8 before (black) and after (red) adding Cu²⁺ solution, the inset shows the photographs of CDs@ZIF-8 dispersion in the absence (left) and presence (right) of Cu²⁺ under UV light. (D) The XRD patterns of the CDs@ZIF-8 before and after treatment of Cu²⁺. (E) UV-vis absorption spectra of CDs@ZIF-8 and CDs@ZIF-8+Cu²⁺.

Table S1 Cu²⁺ amount of the solution by ICP before and after CDs@ZIF-8 treated with Cu²⁺ for 2 h.

Immersion time in Cu ²⁺ aqueous solution	Cu ²⁺ ion amount in filtrate after Cu ²⁺ exchanging
0 h	1 μM
2 h	1.52nM