

Electronic Supplementary Information

Dual-emissive fluorescent sensor fabricated by encapsulating quantum dots and carbon dots into metal–organic frameworks for ratiometric detection of Cu²⁺ in tap water

Yujie Ma, Guanhong Xu, Fangdi Wei, Yao Cen, Yunsu Ma, Yueyue Song,

Xiaoman Xu, Menglan Shi, Muhammad Sohail, Qin Hu*

□ School of pharmacy, Nanjing medical university, Nanjing, Jiangsu 211166, PR

China

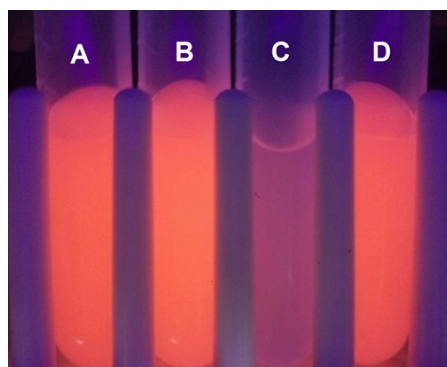


Fig. S1 Photographs of the mixture of QDs/CDs and ZIF-8 (A) and QDs/CDs@ZIF-8 composite (B) before washing, the mixture of QDs/CDs and ZIF-8 (C) and QDs/CDs@ZIF-8 composite (D) after washing.

* Corresponding author: Tel. / fax: +86-2586868468; E-mail: huqin@njmu.edu.cn

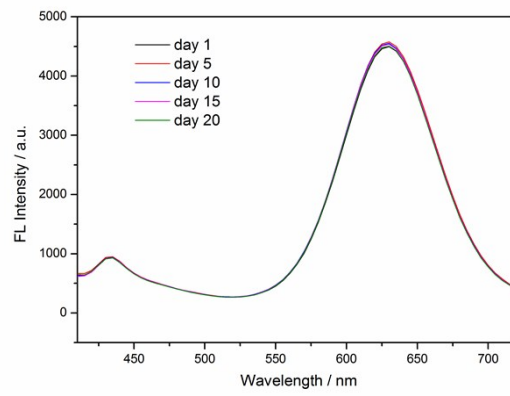


Fig. S2 Long-term stability of QDs/CDs@ZIF-8 composite.

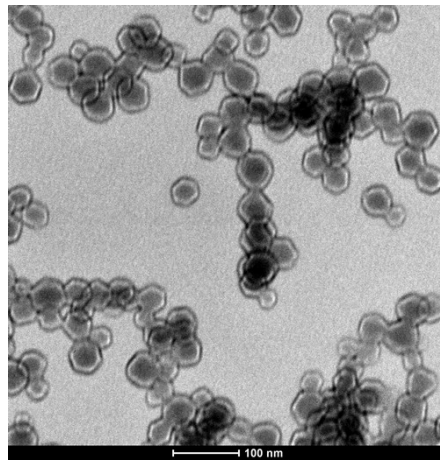


Fig. S3 TEM image of QDs/CDs@ZIF-8 composite.

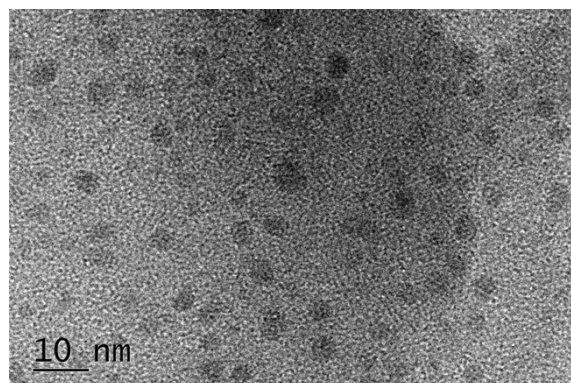


Fig. S4 TEM image of QDs.

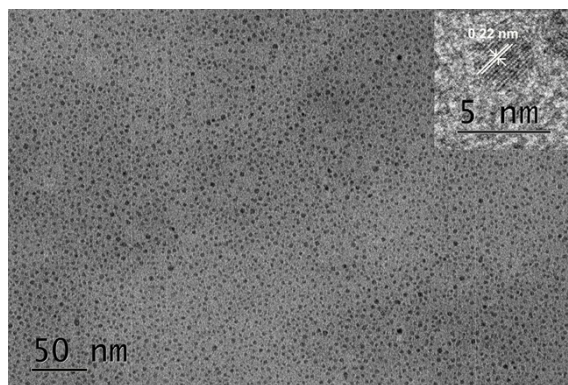


Fig. S5 TEM image of CDs.

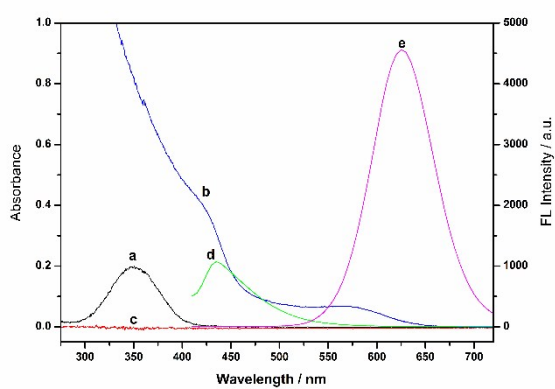


Fig. S6 UV-vis absorption spectra of CDs (a), QDs (b), Cu²⁺ ions (c) and fluorescence emission spectra of CDs (d), QDs (e).

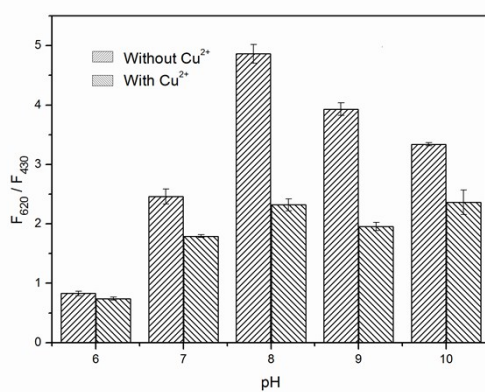


Fig. S7 Fluorescence responses of QDs/CDs@ZIF-8 in the absence and presence of Cu²⁺ at different pH values.

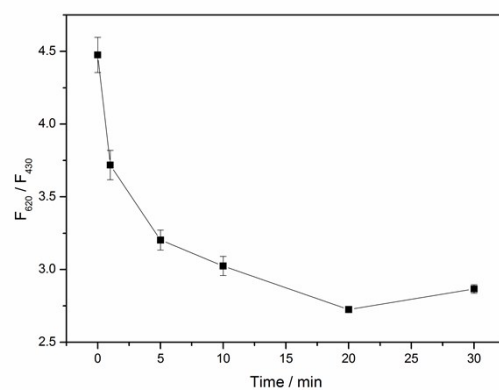


Fig. S8 Effect of incubation time.

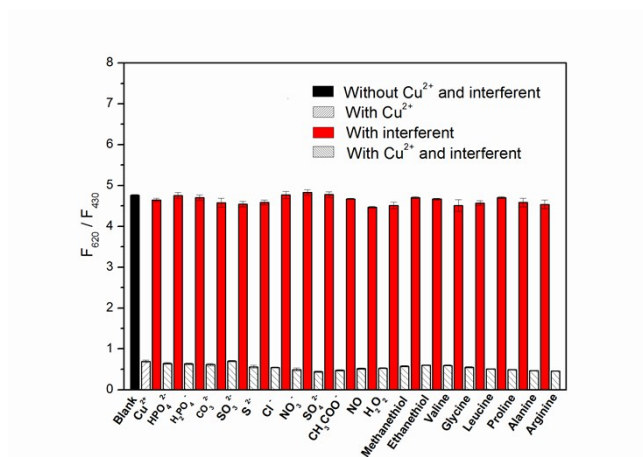


Fig. 9 Selectivity of the QDs/CDs@ZIF-8 based sensor for Cu²⁺ over interferents. The concentrations of QDs/CDs@ZIF-8 and interferents were 15 μ g/mL and 10 μ M, respectively.