

Supporting Information

# A novel dual-emission fluorescence probe based on CDs and Eu<sup>3+</sup> functionalized UiO-66-(COOH)<sub>2</sub> hybrid for visual monitoring Cu<sup>2+</sup>

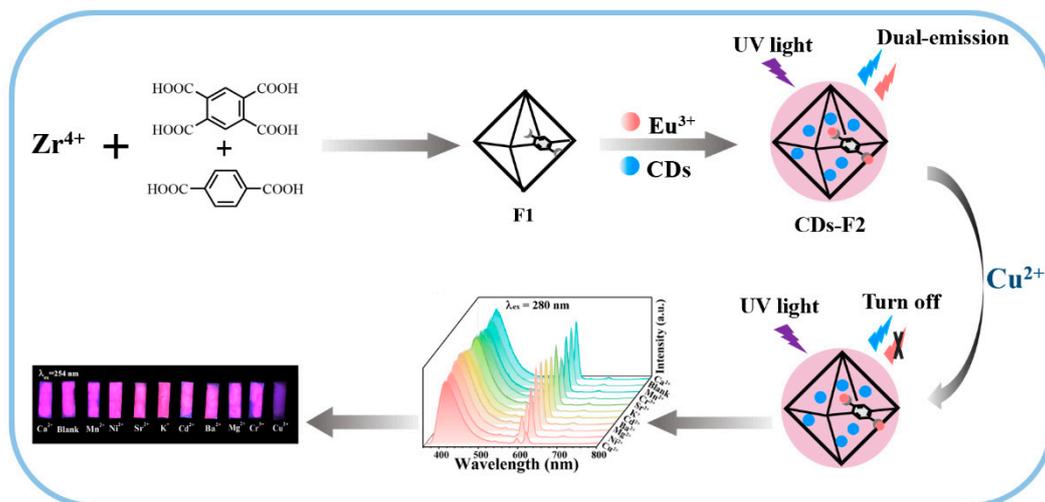
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**Scheme S1.** Schematic diagram of the preparation process and application of CDs-F2.

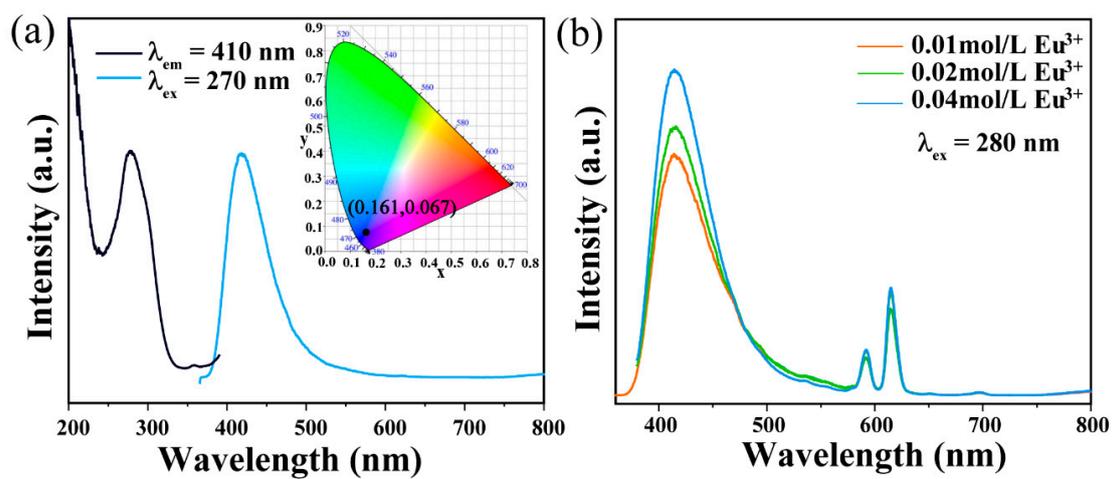


Fig. S1 (a) PL spectra of F1; (b) Emission of F2 with different doped content of  $\text{Eu}^{3+}$ .

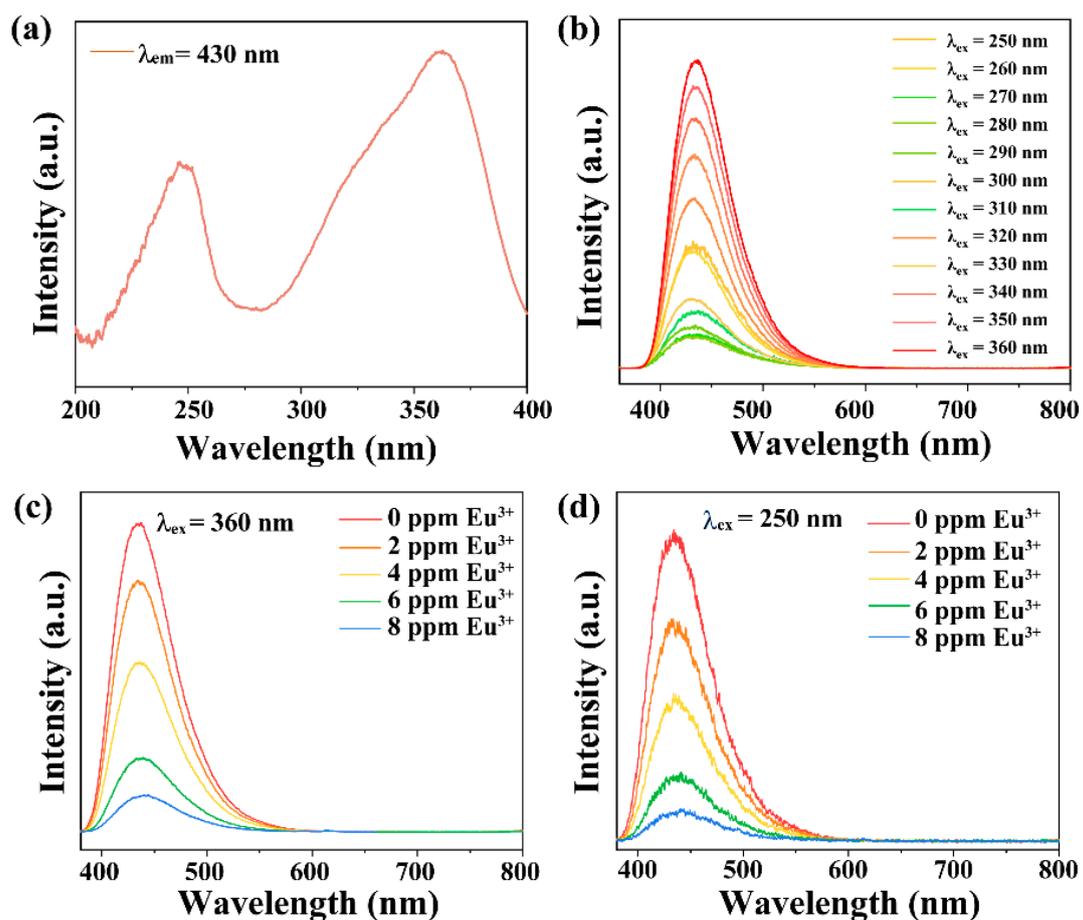


Fig. S2 (a) PL excitation spectra of the CDs; (b) Steady-state emission spectra of CDs at different excitation wavelengths; Steady-state emission spectrum of CDs in the absence and presence of different concentrations of  $\text{Eu}^{3+}$  (c)  $\lambda_{ex} = 360$  nm, (d)  $\lambda_{ex} = 250$  nm.

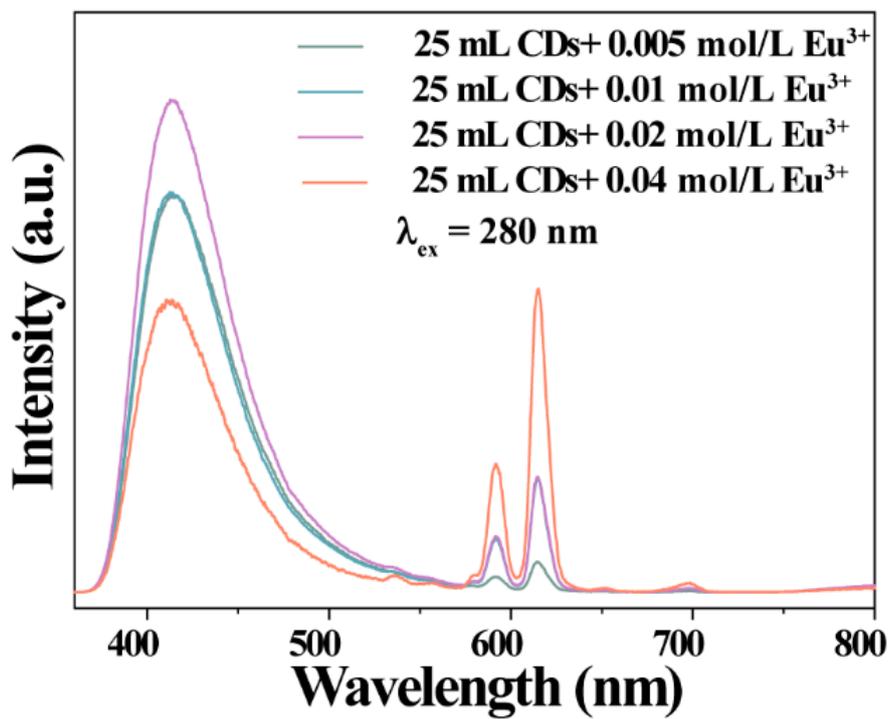


Fig. S3 Emission of synthetic materials in different proportion.

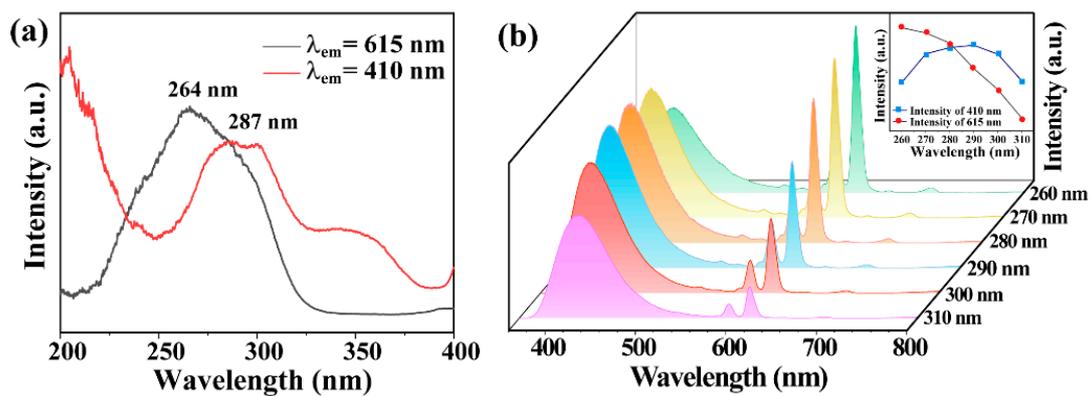


Fig. S4 (a) Excitation spectra of CDs-F2 monitored at 615 nm and 410 nm, respectively. (b) Emission of CDs-F2 with the excitation wavelength from 260-310 nm.

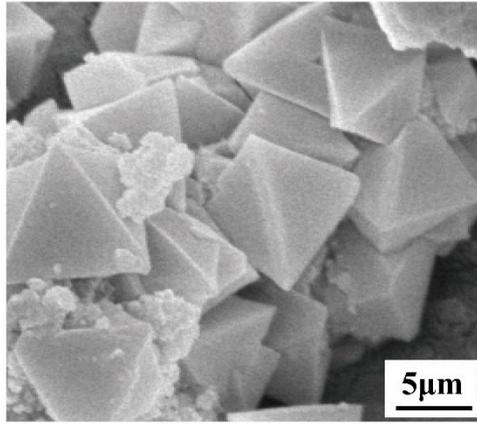


Fig. S5 SEM image of CDs-F2.

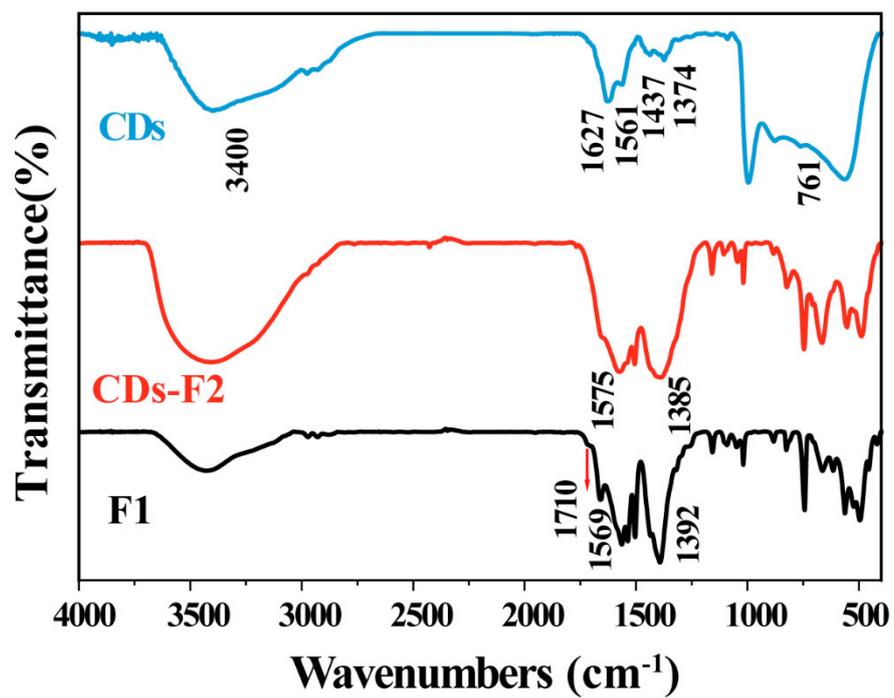


Fig. S6 FT-IR spectra analysis of F1, CDs-F2 and CDs.

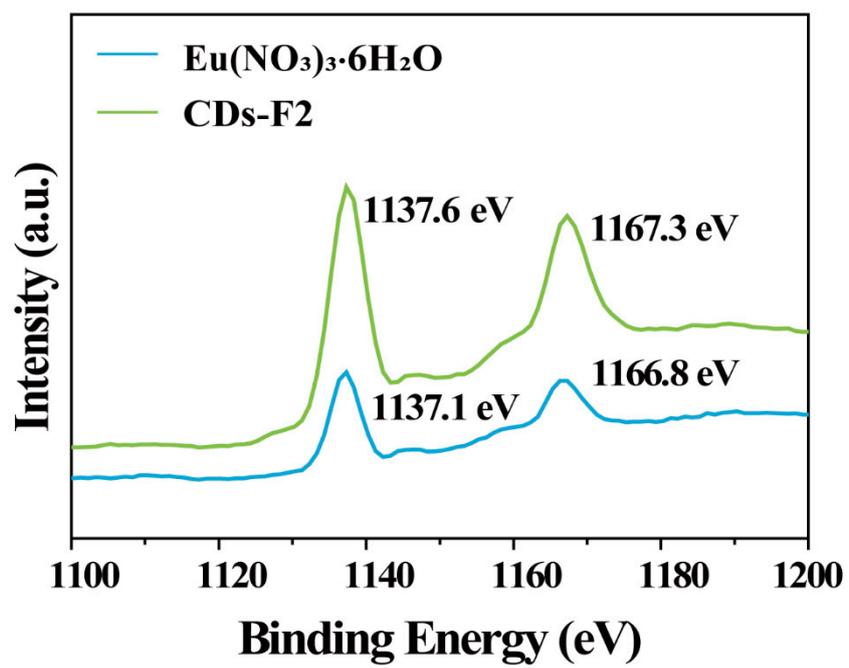


Fig. S7 Eu 3d XPS spectra of Eu(NO<sub>3</sub>)<sub>3</sub>·H<sub>2</sub>O and CDs-F2.

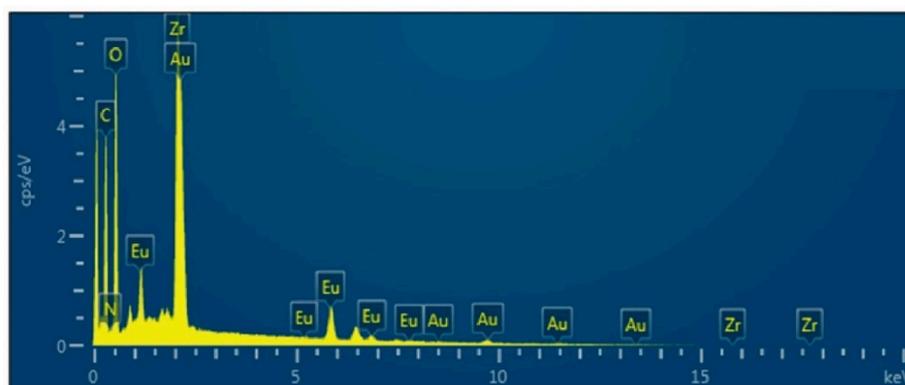


Fig. S8 EDX spectra of **CDs-F2**.

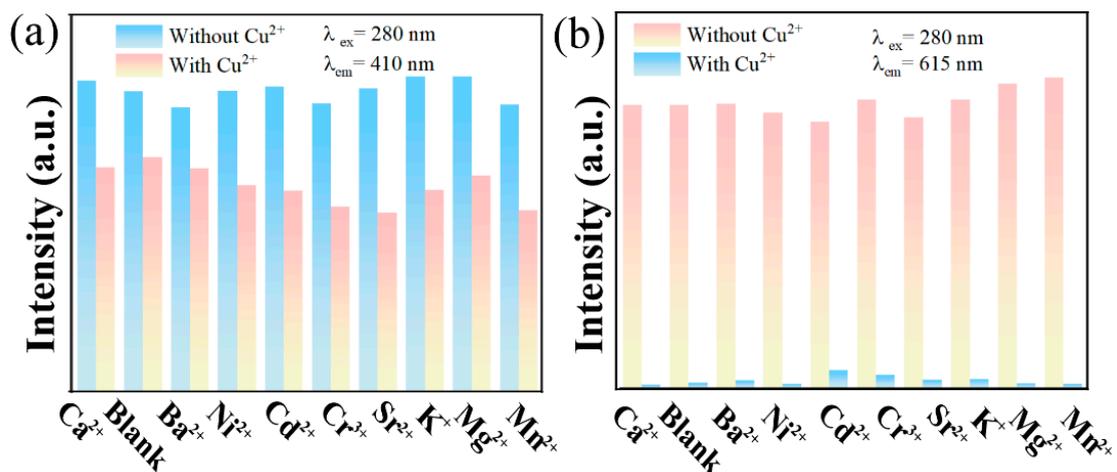


Fig. S9 The response of **CDs-F2** toward coexisting metal ions in the presence and absence of Cu<sup>2+</sup>: (a)  $\lambda_{em} = 410$  nm; (b)  $\lambda_{em} = 615$  nm.

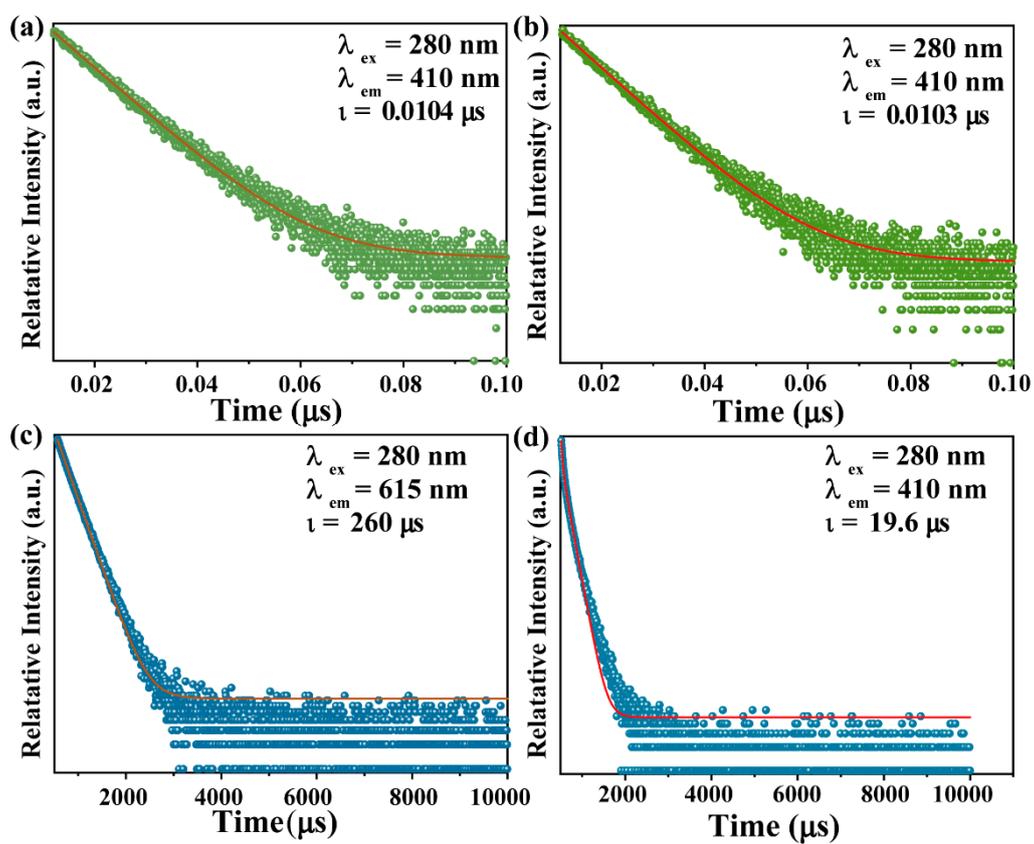


Fig. S10 Fluorescence lifetimes of **CDs-F2** in the absence (a), (c) and presence (b), (d) of  $\text{Cu}^{2+}$  in aqueous solution.

**Table S1** CDs-F2 determined by Energy dispersive analysis by X-rays (EDX).

<b>Element</b>	<b>C</b>	<b>N</b>	<b>Zr</b>	<b>Eu</b>
Atomic %	56.15	0.78	6.16	0.38