

Supporting Information

Coumarin-embedded MOF UiO-66 as a selective and sensitive fluorescence sensor for recognition and detection of Fe³⁺ ion

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Experimental Section

1. Determination of the content of encapsulated HCAA in HCAA@UiO-66

The amount of encapsulated HCAA in the as-prepared HCAA@UiO-66 was determined according to the absorbance difference of HCAA at 321 nm. First, the absorbance intensity at 321 nm of a series of HCAA solutions with different concentrations in ethanol were measured, and then the calibration curve of the absorbance intensities against their concentration was made, shown in Fig. S1. 20 mg HCAA@UiO-66 was dispensed in 10 mL solution of ethanol and triethanolamine ($V_{\text{ethanol}} : V_{\text{triethanolamine}} = 4 : 1$) and the mixture was heat at 70 °C for 4 h. After cooling to room temperature, the solution was brought to a constant volume of 25 mL with ethanol, and its absorbance intensity at 321 nm was measured to be 0.00368. Based on these results, the loaded proportion of HCAA in HCAA@UiO-6 was measured to be 0.46%. The calibration curve and the absorbance intensity of sample are shown in Fig.S1.

Supplementary Figures:

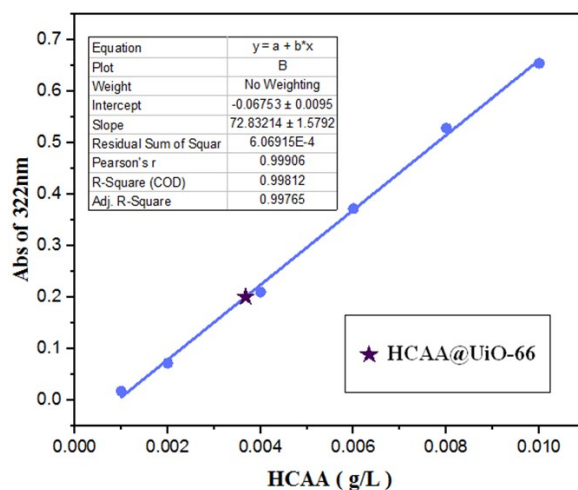


Fig. S1 The calibration curve of absorbance of HCAA at 321 nm.

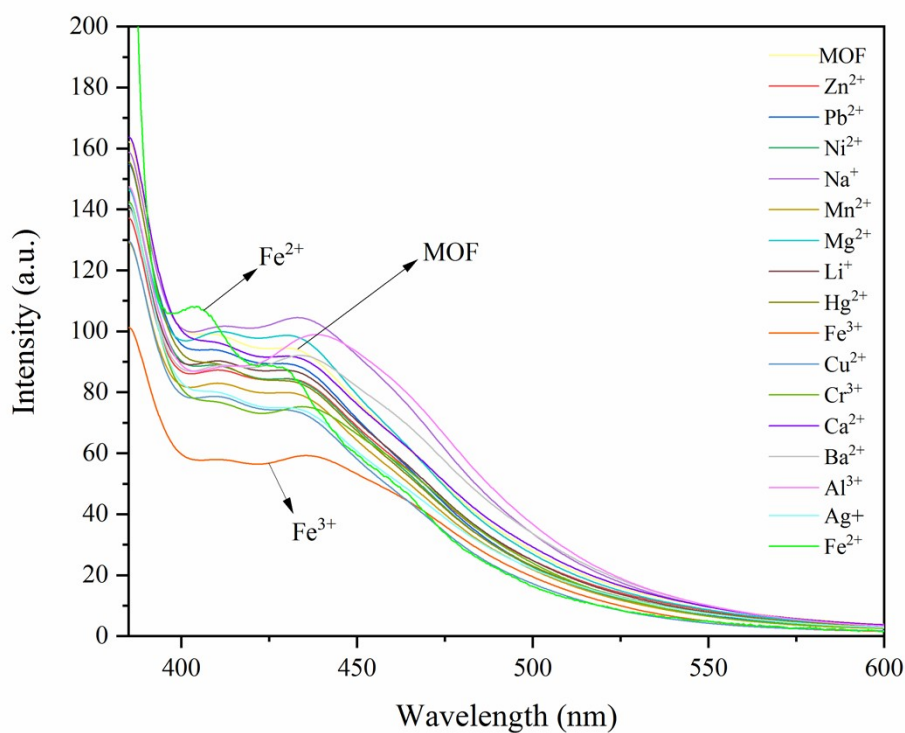


Fig S2 The fluorescence spectra changes of UiO-66 (0.25 mg/mL, 3 mL) in ethanol upon the different metal ions (20 μ L, 20 mmol/L).

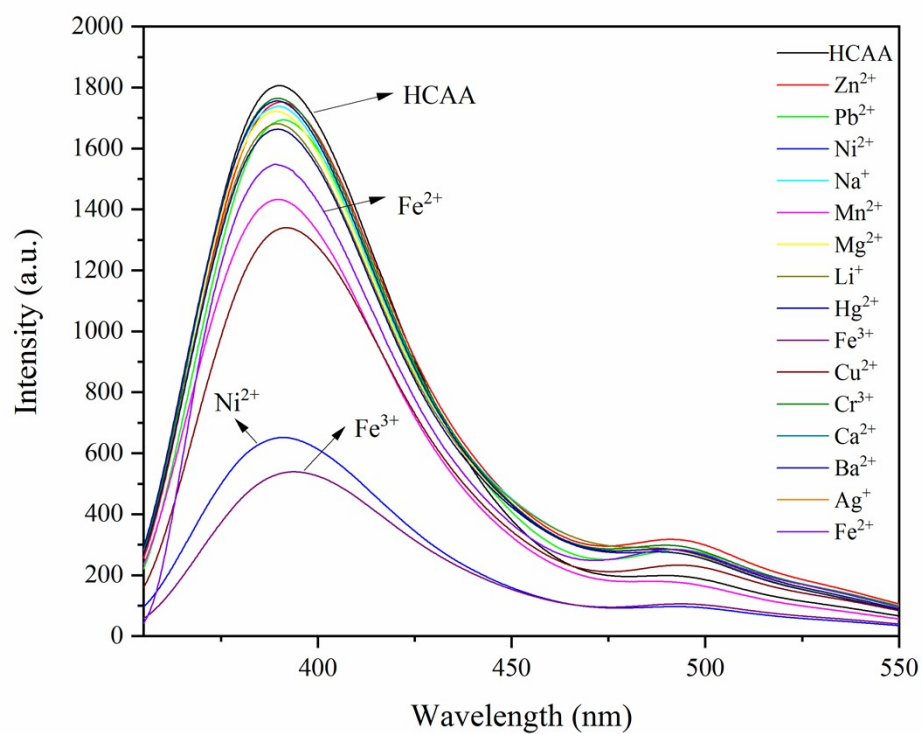


Fig. S3 The fluorescence spectra changes of HCAA (0.1 mmol/L, 3 mL) in ethanol upon the different metal ions (20 μL, 20 mmol/L).