

Supporting information

A Dual-Emission Fluorescence Sensor Based on TCPP@UiO-66-NH₂ for High-Sensitivity Detection of Copper Ions

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Contents

S1 The prepared samples (Left: UiO-66-NH₂, Right: TCPP@UiO-66-NH₂) and their suspension liquids before and after TCPP doping. (photographs taken under UV-lamp, excited at 360 nm)

S2 XRD patterns of the (a) series TCPP@UiO-66-NH₂ and standard PCN-222. (b) Series TCPP@UiO-66-NH₂ fluorescence emission spectra and photographs ($\lambda_{\text{ex}} = 300$ nm).

S3 TGA image of UiO-66-NH₂ and TCPP@UiO-66-NH₂ (in air).

S4 The N₂ adsorption-desorption isotherm (a) and the pore size distribution (b) of UiO-66-NH₂ and TCPP@UiO-66-NH₂.

S5 (a) The XRD of TCPP@UiO-66-NH₂ before and after application. (b) Line chart of I₄₆₆/I₆₅₄ ratio changes in TCPP@UiO-66-NH₂ probe solution during 7 days. (c) Line chart of I₄₆₆/I₆₅₄ ratio changes cycled four times TCPP@UiO-66-NH₂.

Table S1 Statistical data on the linear response range and detection limit of Cu²⁺ based on fluorescent MOFs probes.

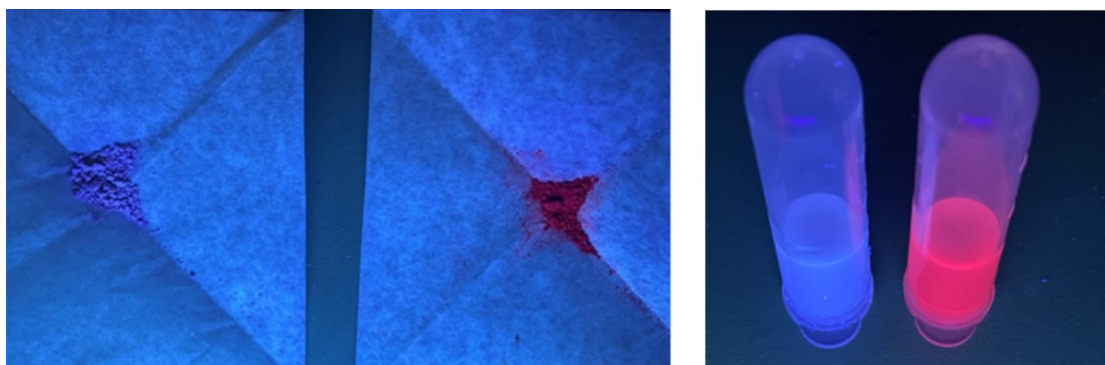


Fig. S1. The prepared samples (Left: UiO-66-NH₂, Right: TCPP@UiO-66-NH₂) and their suspension liquids before and after TCPP doping. (photographs taken under UV-lamp, excited at 360 nm)

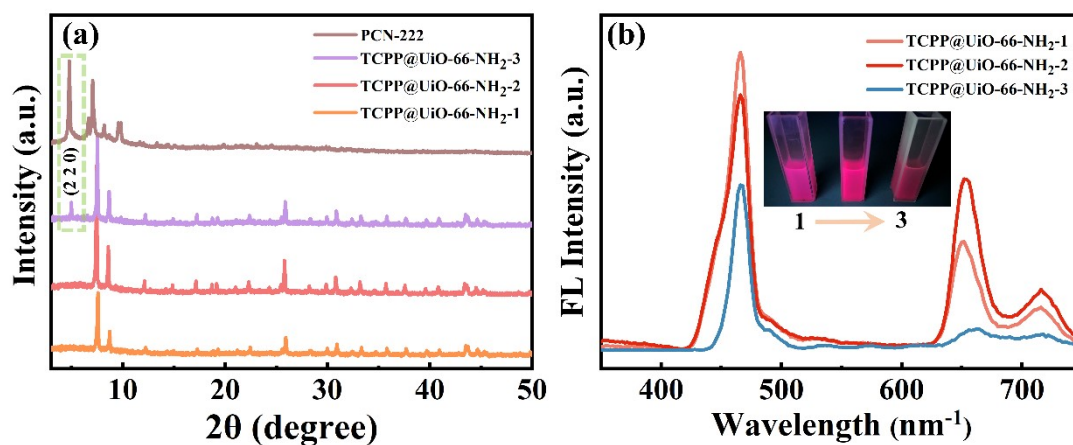


Fig. S2. XRD patterns of the (a) series TCPP@UiO-66-NH₂ and standard PCN-222. (b) Series TCPP@UiO-66-NH₂ fluorescence emission spectra and photographs ($\lambda_{\text{ex}} = 300 \text{ nm}$).

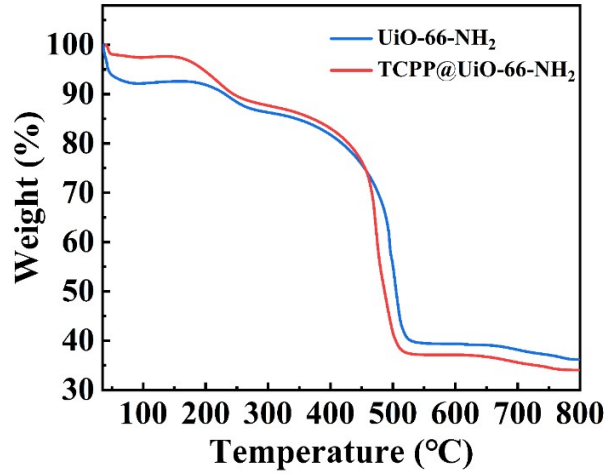


Fig. S3. TGA image of UiO-66-NH₂ and TCPP@UiO-66-NH₂ (in air).

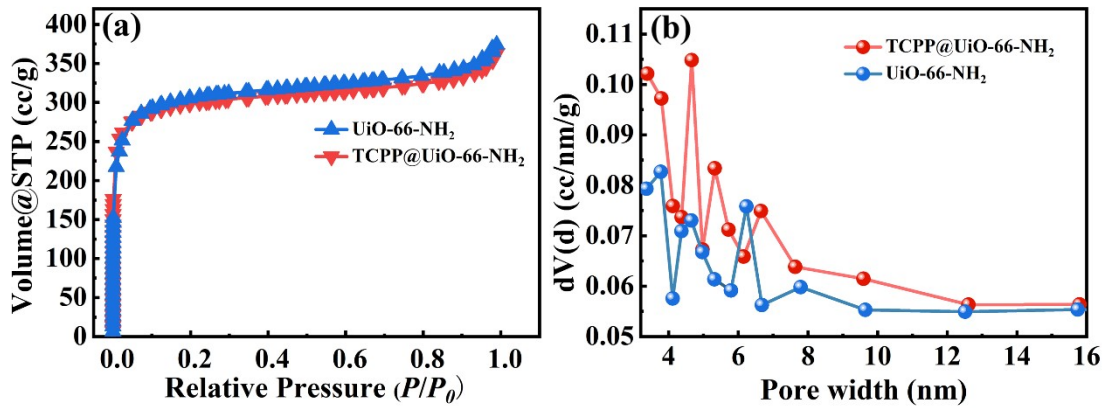


Fig. S4. The N₂ adsorption-desorption isotherm (a) and the pore size distribution (b) of UiO-66-NH₂ and TCPP@UiO-66-NH₂.

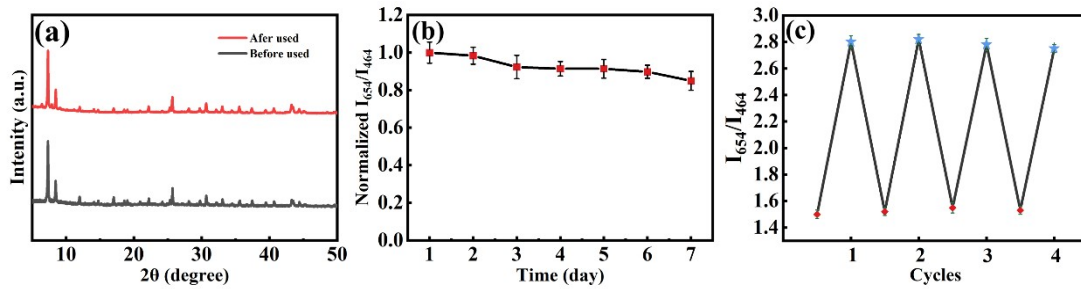


Fig. S5. (a) The XRD of TCPP@UiO-66-NH₂ before and after application. (b) Line chart of I₄₆₆/I₆₅₄ ratio changes in TCPP@UiO-66-NH₂ probe solution during 7 days. (c) Line chart of I₄₆₆/I₆₅₄ ratio changes cycled four times TCPP@UiO-66-NH₂.

Table S1 Statistical data on the linear response range and detection limit of Cu²⁺ based on fluorescent MOFs probes.

MOF	Linear range (μM)	LOD	Ref.
PCN-222-Pd(II)	0-2	50 nM	1
MIL-53-L	0-400	10 μM	2
$\{[\text{Nd}_2(\text{NH}_2\text{-BDC})_3(\text{DMF})_4]\}_n$	0-10 ⁴	24.95 μM	3
Cd-MOF-74	0-5950	0.037 mM	4
MOF-525	0-20	67 nM	5
Eu ³⁺ @CAU-11	50-10 ⁴	6.2 μM	6
CDs-PCN-224	0-10	44 nM	7
TCPP@UiO-66-NH ₂	0-10	24 nM	This work

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