

Supporting Information

A luminescent metal organic framework with high sensitivity for detection and removal of copper ions from simulated biological fluids

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Table S1. Crystal data and structure refinement for **Cd-MOF-74**.

Empirical formula	C₁₄ H₁₆ Cd₂ N₂ O₈
Formula weight	565.09
Crystal system	Trigonal
Space group	R -3
a (Å)	26.888(3)
b (Å)	26.888(3)
c (Å)	7.2385(7)
α (°)	90.00
β (°)	90.00.
γ (°)	120.00.
V (Å ³)	4532.1(9)
Z	9
D _c [g/cm ³]	1.863
F(000)	2466
Reflections collected	8725
R(int)	0.0436
Goodness-of-fit on F ²	1.066
R ₁ ^a [I>2σ (I)]	0.0409,
wR ₂ ^b	0.1128
^a R ₁ = Σ F _o - F _c / Σ F _o , ^b wR ₂ = [Σ w (F _o ² - F _c ²) ² / Σ w (F _o ²)] ^{1/2}	

Table S2. Fluorescence spectra of **Cd-MOF-74** in different concentrations of CuCl₂ aqueous solutions.

Concentration (ppm)	Intensity(a.u.)	P ₀ /P-1 ^a
0	7678	0
5	7230	0.062
10	7108	0.08
20	6471	0.187
50	5245	0.463
100	4098	0.874
200	2823	1.72
400	1762	3.558
600	1148	5.688
800	775.1	8.906

^aP₀/P = 1 + K_{sv}[C]eqn(1)

Table S3. ICP results of **Cd-MOF-74** for metal ion adsorption in different solvents containing Cu^{2+} , Co^{2+} and Ni^{2+} (0.1M) after 12h immersing.

Solution	Metal ions	M/Cd Concentration ratio (ug/ml)
DMF	Cu	0.0924/13.85
	Co	0.0054/13.85
	Ni	0.17/13.85
MeOH	Cu	1.05/11.65
	Co	0.010/11.65
	Ni	0.13/11.65
H ₂ O	Cu	7.67/10.10
	Co	0.32/10.10
	Ni	0.21/10.10

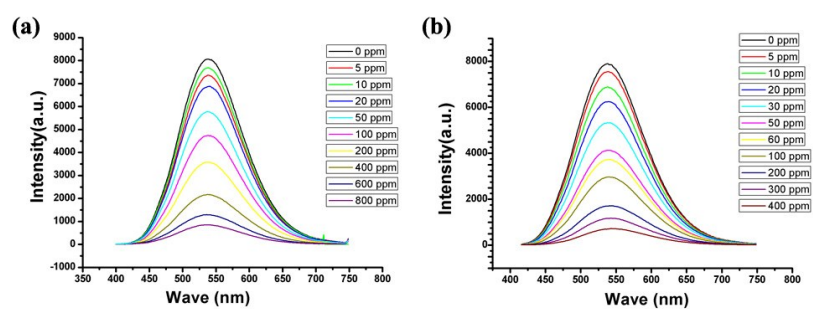


Fig. S1 Photoluminescence (PL) emission spectrum of Cd-MOF-74 in different concentrations of $\text{Cu}(\text{NO}_3)_2$ aqueous solutions (a) and HEPES buffer aqueous solutions (b).

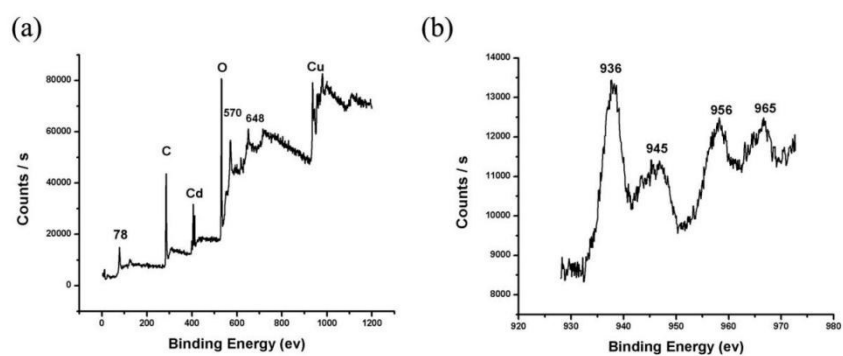


Fig. S2 (a) XPS of **Cu/Cd-MOF-74**, (b) XPS of Cu in **Cu/Cd-MOF-74**.

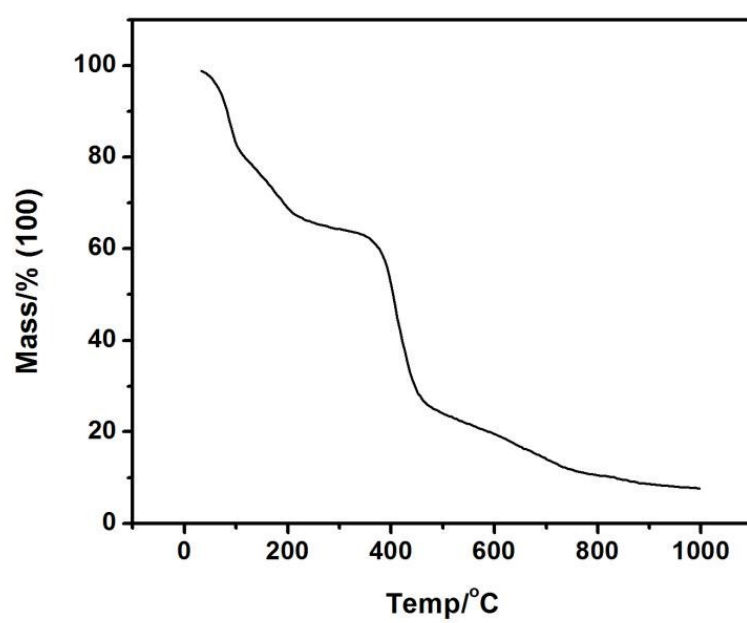


Fig. S3 TG curve of **Cd-MOF-74**.

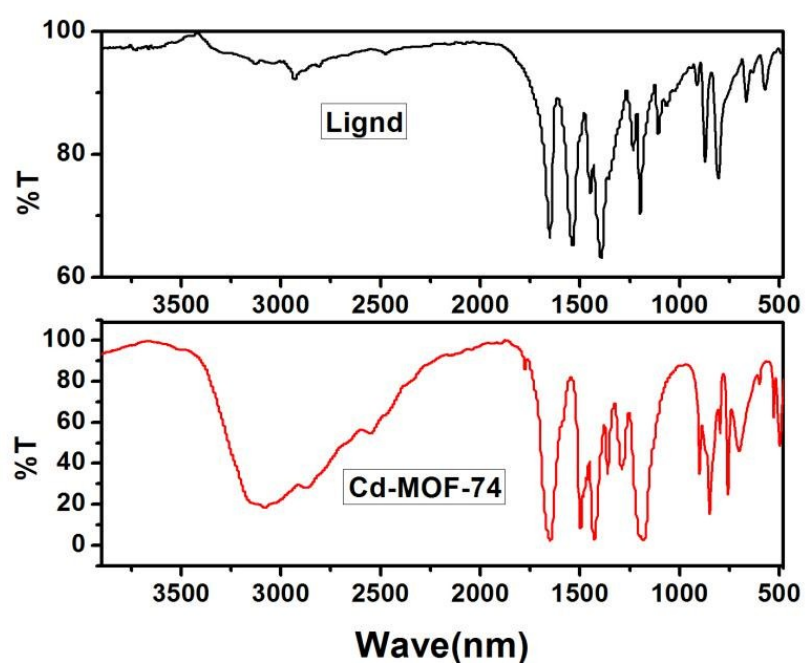


Fig. S4 IR spectrum of ligand and **Cd-MOF-74**.

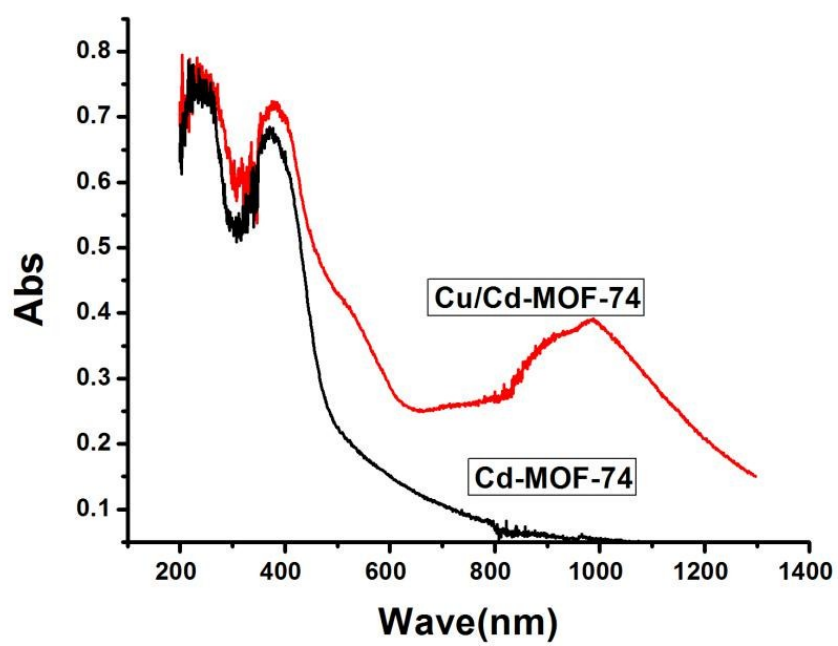


Fig. S5 UV spectrum of **Cd-MOF-74** and **Cu/Cd-MOF-74**.