Electronic Supplementary Information (ESI)

A fluorescent sensor for highly selective sensing of nitro explosives and Hg (II) ion based on a 3D porous layer metal-organic framework

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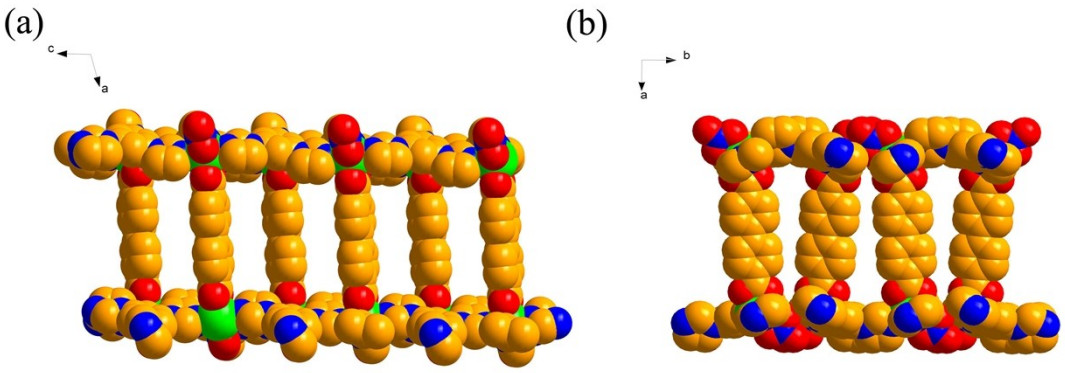

Fig. S1 The space-filling structure of **1** along *b* axis (a) and *c* axis (b). All hydrogen atoms are omitted for clarity. The green, red and blue represent cadmium, oxygen and nitrogen atoms, respectively.

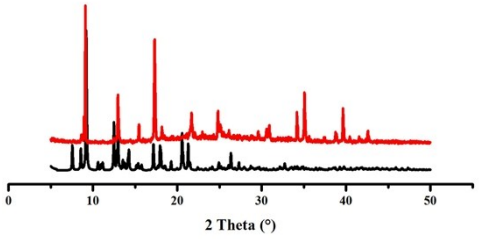

Fig. S2 PXRD powder diffraction patterns of **1**: simulated (black), as-synthesized (red).

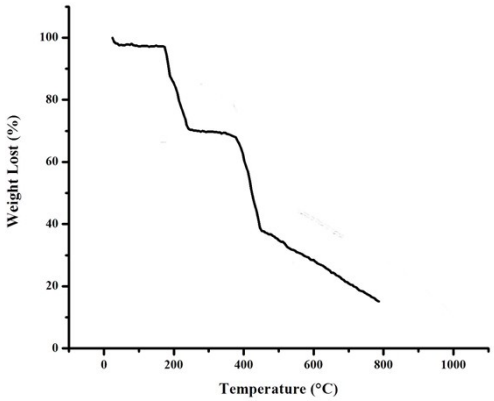

Fig. S3 The TG curve of **1**.

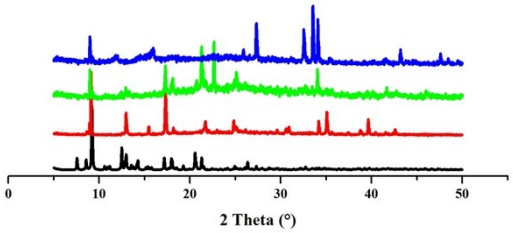

Fig. S4 PXRD powder diffraction patterns of simulated (black), experimental (red), in boiled water for 3 days (green) and in boiled water for 7 days (blue) of **1**.

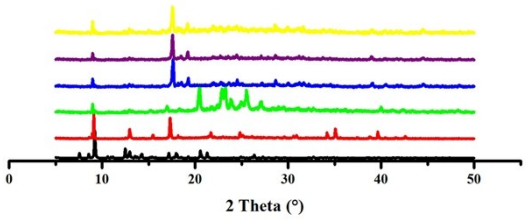

Fig. S5 PXRD powder diffraction patterns of simulated (black), experimental (red), pH = 3 (green), pH = 4 (blue), pH = 10 (purple), pH = 11 (yellow) of **1**.

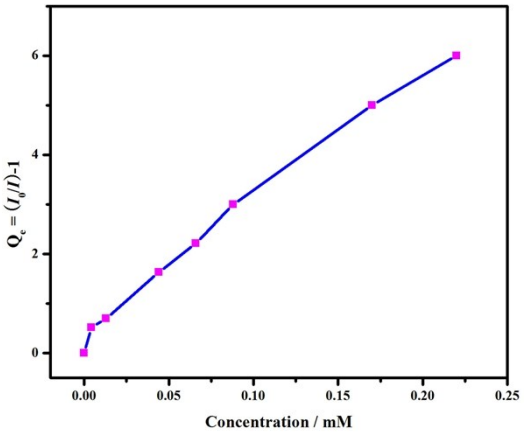

Fig. S6 The Stern–Volmer plot for TNP.

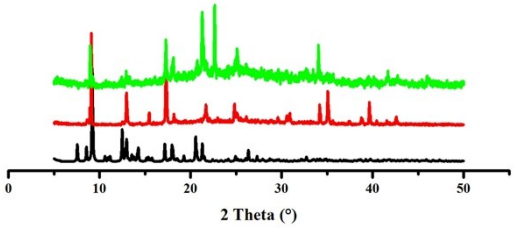

Fig. S7 PXRD powder diffraction patterns of **1**: simulated (black), experimental (red), in TNP for five circulations.

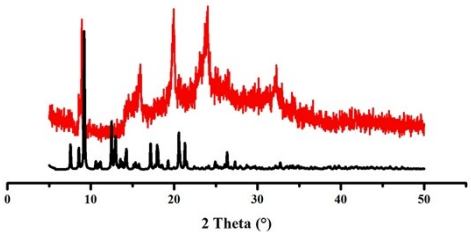

Fig. S8 PXRD powder diffraction patterns patterns of simulated (black), in a Hg^{2+} solution with a concentration of 1.0×10^{-2} M for 5 hours (red) **1**.

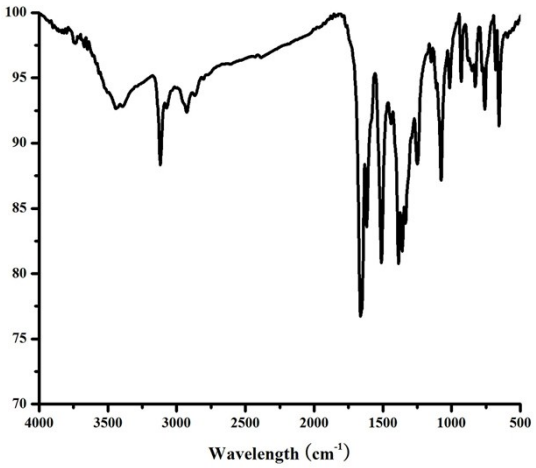

Fig. S9 FT-IR spectra of **1**.

Table S1 Selected Bonds Lengths (Å) and Angles (°) for **1**

Compound **1**

Cd(1)-N(1)	2.286(3)	Cd(1)-N(6)#1	2.307(3)
Cd(1)-N(4)#2	2.316(3)	Cd(1)-O(1)	2.353(3)
Cd(1)-O(2)	2.463(3)	Cd(1)-O(3)	2.481(3)
Cd(1)-O(4)	2.492(3)	N(4)-Cd(1)#1	2.316(3)
N(6)-Cd(1)#2	2.307(3)	N(7)-O(3)-Cd(1)	95.85(19)
N(7)-O(4)-Cd(1)	95.33(19)	N(1)-Cd(1)-N(6)#1	92.14(10)
N(1)-Cd(1)-N(4)#2	91.97(10)	N(6)#1-Cd(1)-N(4)#2	174.92(10)
N(1)-Cd(1)-O(1)	138.72(10)	N(6)#1-Cd(1)-O(1)	92.23(11)
N(4)#2-Cd(1)-O(1)	86.64(10)	N(1)-Cd(1)-O(2)	85.37(10)
N(6)#1-Cd(1)-O(2)	90.41(11)	N(4)#2-Cd(1)-O(2)	92.89(11)
O(1)-Cd(1)-O(2)	53.57(10)	N(1)-Cd(1)-O(3)	138.87(10)
N(6)#1-Cd(1)-O(3)	84.05(9)	N(4)#2-Cd(1)-O(3)	90.89(9)
O(1)-Cd(1)-O(3)	82.41(10)	O(2)-Cd(1)-O(3)	135.43(10)
N(1)-Cd(1)-O(4)	88.20(10)	N(6)#1-Cd(1)-O(4)	92.20(10)
N(4)#2-Cd(1)-O(4)	84.95(9)	O(1)-Cd(1)-O(4)	132.58(9)
O(2)-Cd(1)-O(4)	173.15(10)	O(3)-Cd(1)-O(4)	51.23(9)

Symmetry transformations used to generate equivalent atoms: #1 = x, -y+3/2, z+1/2; #2 = x, -y+3/2, z-1/2.