

Supplementary Material

A Novel Interpenetrating Metal-organic Framework: Synthesis, Structure and Luminescence Detection of Nitrobenzene

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Table S1. Selected bond lengths(Å) and angles (°) for compound **1**

Tb1-O1	2.315(5)	O9-Tb1-O6 ⁴	143.90(17)
Tb1-O3 ³	2.493(5)	O9-Tb1-O11	77.09(17)
Tb1-O4 ³	2.451(4)	O1-Tb1-C19	162.70(18)
Tb1-O5 ⁴	2.461(5)	O1-Tb1-O3 ³	123.97(15)
Tb1-O6 ⁴	2.496(5)	O1-Tb1-O8	152.78(18)
Tb1-O8	2.739(5)	O1-Tb1-O7	144.94(19)
Tb1-O9	2.349(5)	O1-Tb1-C13 ⁴	87.9(2)
Tb1-O11	2.415(4)	O1-Tb1-O5 ⁴	93.15(18)
Zn1-N1	2.167(5)	N4 ² -Zn1-N3 ²	76.1(2)
Zn1-N2	2.122(5)	N1-Zn1-N3 ²	97.7(2)
Zn1-N4 ²	2.126(5)	O13-Zn1-N3 ²	166.36(19)
Zn1-N3 ²	2.182(6)	O12-Zn1-N3 ²	93.1(2)
Zn1-O13	2.105(5)	N2-Zn1-N1	76.2(2)
Zn1-O12	2.132(4)	N2-Zn1-O12	92.8(2)

¹+X,-1+Y,+Z; ²1/2+X,3/2-Y,1/2+Z; ³+X,1+Y,+Z; ⁴+X,2-Y,1/2+Z; ⁵+X,2-Y,-1/2+Z; ⁶-1/2+X,3/2-Y,-1/2+Z

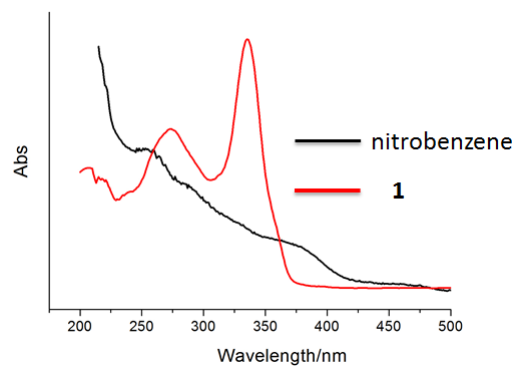


Fig. S1 The UV spectra of the aqueous suspension of **1** and nitrobenzene.

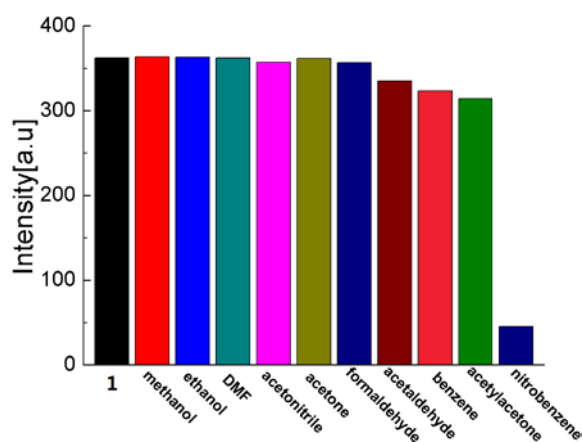


Fig. S2 The ${}^5D_4 \rightarrow {}^7F_5$ transition intensities of **1** after addition of 20 ppm organic solvents (monitored at 546 nm).

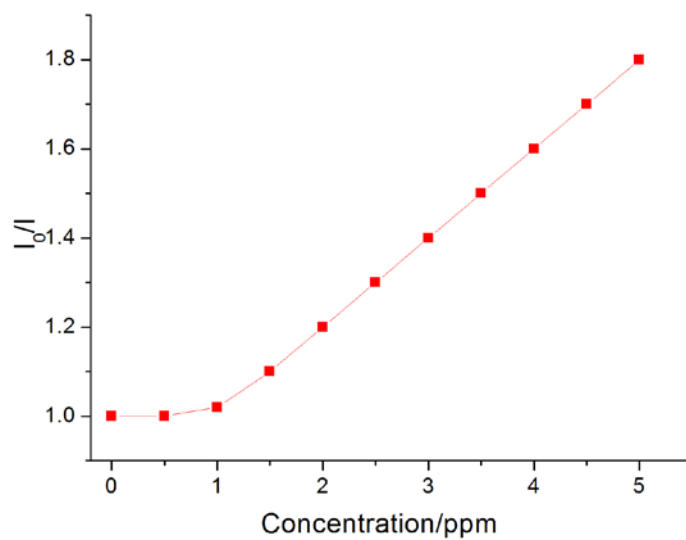


Fig. S3 Luminescence quenching vs concentration of nitrobenzene plot (based on ${}^5D_4 \rightarrow {}^7F_6$ emission at 546 nm) indicating the detection limit (where I_0 and I are the luminescence intensities before and after the addition of nitrobenzene).

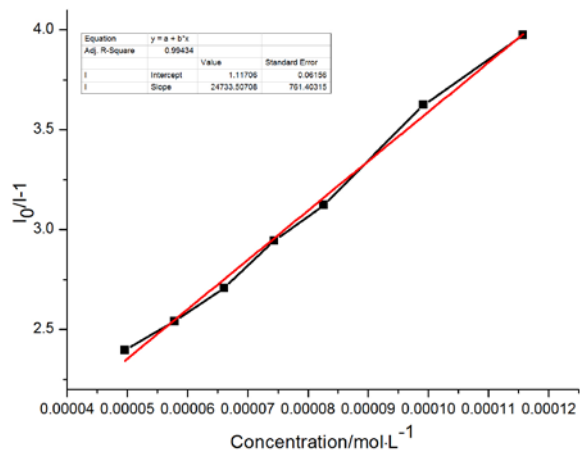


Fig. S4 Plot of $I_0/I-1$ of the compound **1** (at 546 nm) vs concentration of nitrobenzene in low concentration.

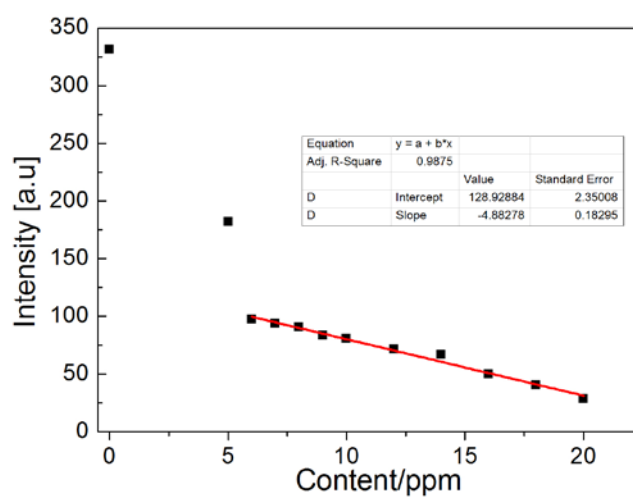


Fig. S5 The plots of intensity vs different contents of nitrobenzene at 546 nm.