

Article

A Zn(II)–Metal–Organic Framework Based on 4-(4-Carboxyphenoxy) Phthalate Acid as Luminescent Sensor for Detection of Acetone and Tetracycline

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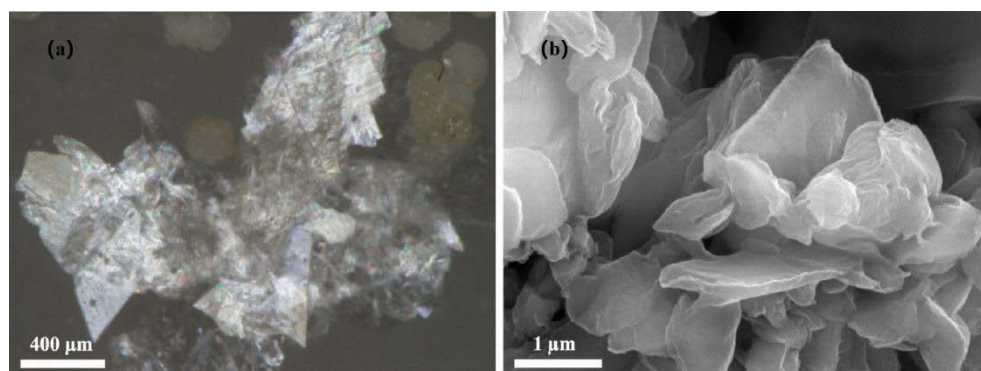


Figure S1. (a) Optical microscopy image and (b) SEM image of the Zn-MOF.

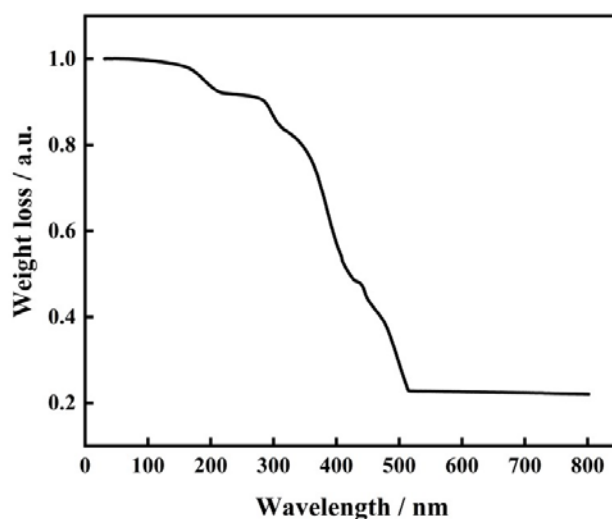


Figure S2. TGA curve of Zn-MOF.

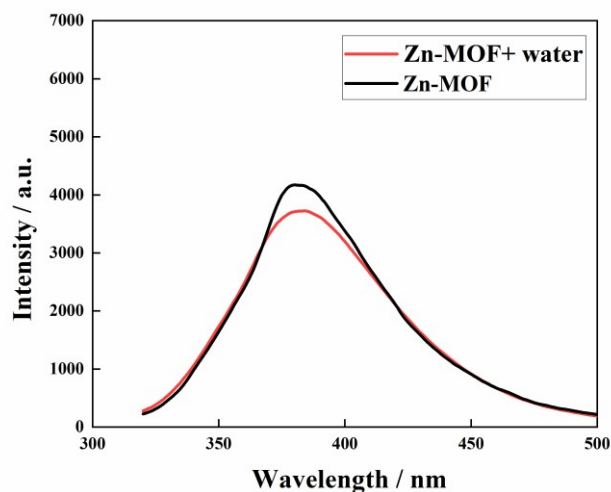


Figure S3. The emission spectra of Zn-MOF in solids and water.

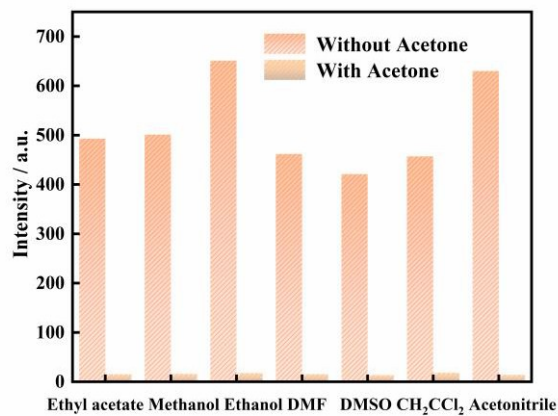


Figure S4. The luminescence intensity of Zn-MOF in different interfering solvents with and without acetone.

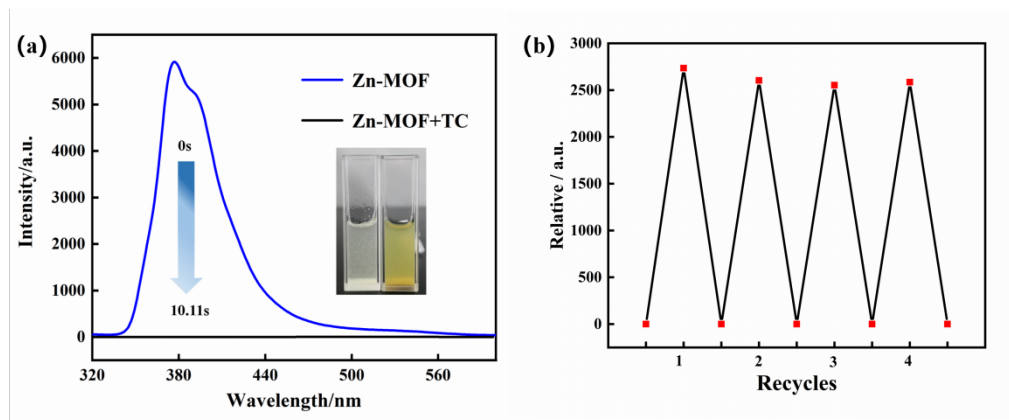


Figure S5. (a) Time response of Zn-MOF to TC and (b) recycling experiment.

Table S1 The crystal data of Zn-MOF.

Complex	1
Empirical formula	C ₅₂ H ₄₄ Zn ₃ N ₁₀ O ₂₀
Formula weight	1325.08
Crystal system	Monoclinic
Space group	P2 ₁ /n
a/Å	7.8505(4)
b/Å	15.8782(6)
c/Å	21.6811(8)
α/°	90
β/°	90.08
γ/°	90
Volume (Å ³)	2702.6(2)
Z	2
Calculated density g/cm ³	1.628
Absorption coefficient /mm ⁻¹	1.410
F (000)	1352
Crystal size/mm ³	0.461 × 0.113 × 0.107
Theta range for data collection/(°)	2.895 to 27.555
Limiting indices	-9 ≤ h ≤ 10,
Reflections collected/ unique	26989/ 4851
Data/restraints/parameters	4851 / 0 / 394
Goodness-of-fit on F ²	1.058
Final R indices [I > 2σ(I)]	R1=0.0431,
R Indices (all data)	R1= 0.0815,
Largest diff. peak and hole/e Å ⁻³	0.432 and -0.328
CCDC No.	2167668

Table S2 Selected bond lengths [Å] and angles [°] for Zn-MOF.

Zn-MOF				
43	Zn(1)-O(4)A	1.946(2)	Zn(2)-O(8)	2.118(2)
	Zn(1)-O(2)	1.933(2)	Zn(2)-O(8)A	2.118(2)
44	Zn(1)-N(1)	2.024(2)	Zn(2)-O(9)	2.079(2)
45	Zn(1)-N(5)	2.010(3)	Zn(2)-O(9)A	2.079(2)
	Zn(2)-N(3)A	2.140(2)	Zn(2)-N(3)	2.140(2)
46	O(2)-Zn(1)-O(4)A	125.85(11)	O(9)B-Zn(2)-O(8)B	94.96(8)
47	O(2)-Zn(1)-N(1)	100.22(11)	O(9)-Zn(2)-O(8)	94.96(8)
48	O(2)-Zn(1)-N(5)	95.94(11)	O(9)-Zn(2)-O(8)B	85.04(8)
49	O(4)A-Zn(1)-N(1)	110.10(9)	O(9)B-Zn(2)-O(8)	85.04(8)
50	O(4)A-Zn(1)-N(5)	112.76(9)	O(9)B-Zn(2)-O(9)	180
	N(5)-Zn(1)-N(1)	110.53(10)	O(9)-Zn(2)-N(3)	88.23(9)
51	O(8)-Zn(2)-O(8)B	180	O(9)B-Zn(2)-N(3)	91.76(9)
52	O(8)B-Zn(2)-N(3)	90.97(10)	O(9)-Zn(2)-N(3)B	91.77(9)
53	O(8)B-Zn(2)-N(3)B	89.03(9)	O(9)B-Zn(2)-N(3)B	88.24(9)
	O(8)-Zn(2)-N(3)B	90.97(10)	N(3)-Zn(2)-N(3)B	180
54	O(8)-Zn(2)-N(3)	89.03(9)		

Symmetry transformations used to generate equivalent atoms:

A: $-x-3/2, y+1/2, -z+1/2$ B: $-x-3, -y, -z+1$ C: $-x-7/2, y+1/2, -z+1/2$ D: $-x-3/2, y-1/2, -z+1/2$ E: $-x-7/2, y-1/2, -z+1/2$