Supplemental Material

Synthesis, structure, and properties of a 3D porous Zn(II) MOF constructed from a terpyridine-based ligand

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The 4'-(furan-2-yl)-[2,2':6',2"-terpyridine]-4,4"-dicarboxylic acid was prepared according to the reported procedures.[1]

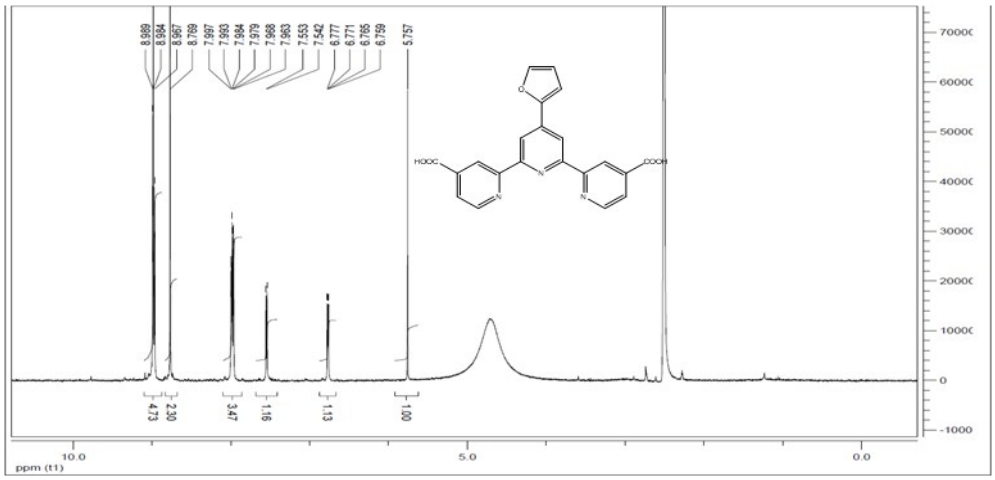

Fig. S1 The H^1 NMR of H_2L ligand.

Table S1 Selected bond lengths (Å) and angles (º) for **1**

Zn1-O5	2.256 (9)	Zn1-O6	2.235 (6)	Zn1-O7	1.955 (4)
Zn1-N1	2.175 (4)	Zn1-N2	2.071 (4)	Zn1-N3	2.159 (4)
Zn2-O3	1.973 (3)	Zn2-O1	1.945 (3)	Zn2-N4	2.176 (4)
Zn2-N5	2.082(4)	Zn2-N6	2.224(4)		
O3-Zn2-N5	109.88(14)	O3-Zn2-N4	93.93 (16)	O3-Zn2-N6	99.57 (16)
O1-Zn2-O3	124.10(17)	O1-Zn2-N5	125.44 (16)	O1-Zn2-N4	106.16 (16)
O1-Zn2-N6	88.26 (17)	N5-Zn2-N4	75.30 (16)	N5-Zn2-N6	74.87 (16)
N4-Zn2-N6	149.93(17)	N3-Zn1-N1	150.00 (18)	N3-Zn1-O5	104.5 (2)
N3-Zn1-O6	93.03 (18)	O7-Zn1-N3	94.96 (16)	O7-Zn1-N2	132.84 (16)
O7-Zn1-N1	99.44 (16)	O7-Zn1-O5	87.17 (2)	O7-Zn1-O6	142.3 (3)
N2-Zn1-N3	75.11 (15)	N2-Zn1-N1	75.79 (16)	N2-Zn1-O5	139.97 (18)
N2-Zn1-O6	84.8 (3)	N1-Zn1-O5	102.4 (2)	N1-Zn1-O6	91.47 (17)
O6-Zn1-O5	55.2 (3)				

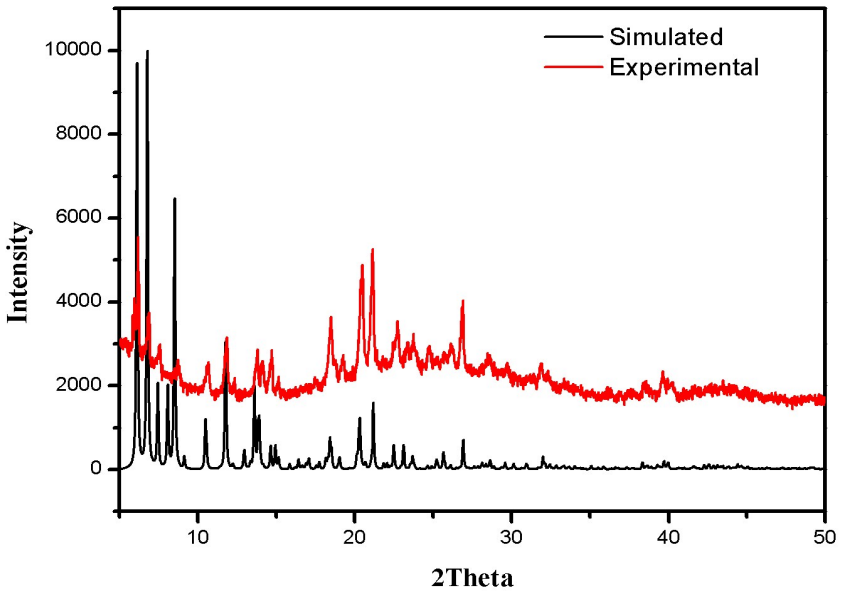

Fig. S2 The powder XRD pattern and the simulated one from the single-crystal diffraction data for complex **1**.

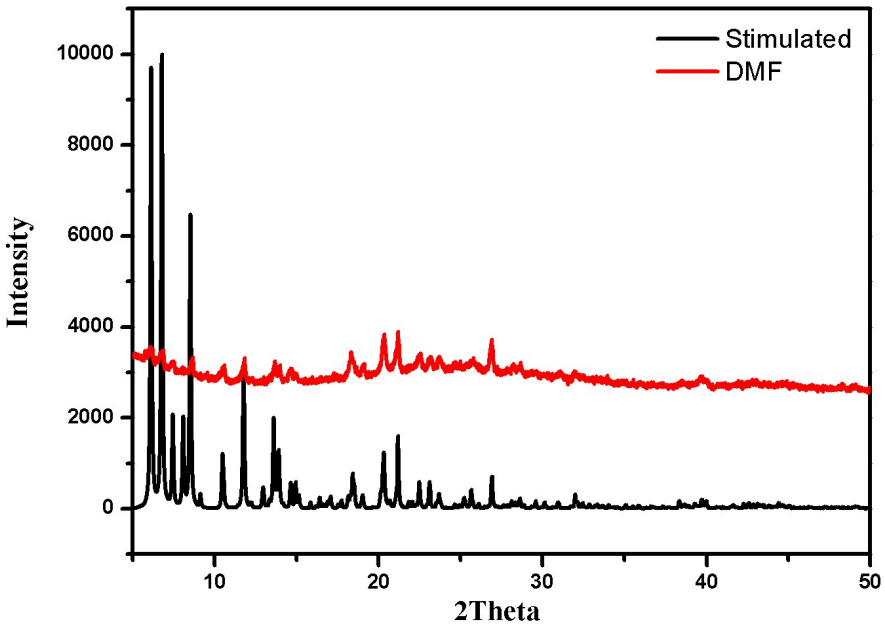

Fig. S3 The PXRD patterns of complex **1** treated in DMF.

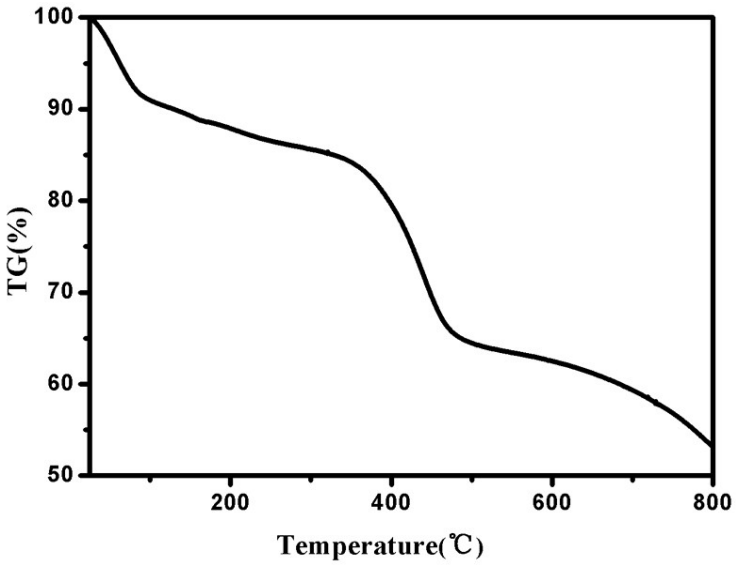

Fig. S4 TG curve of complex **1**.

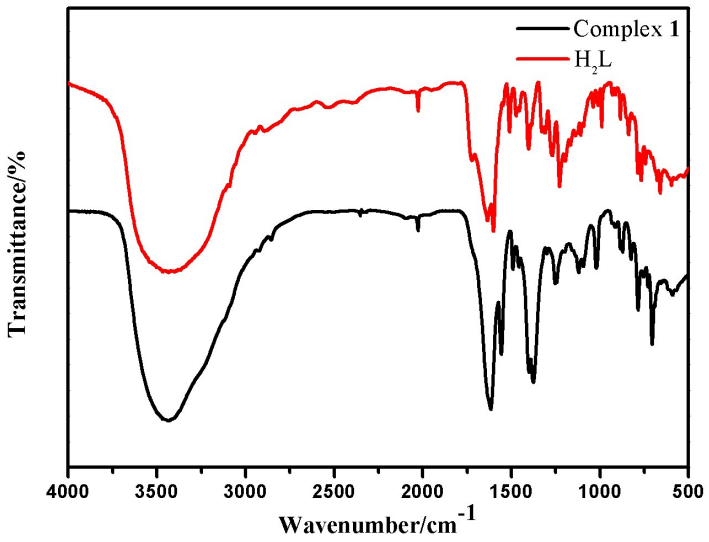

Fig. S5 IR spectrum of complex **1**.

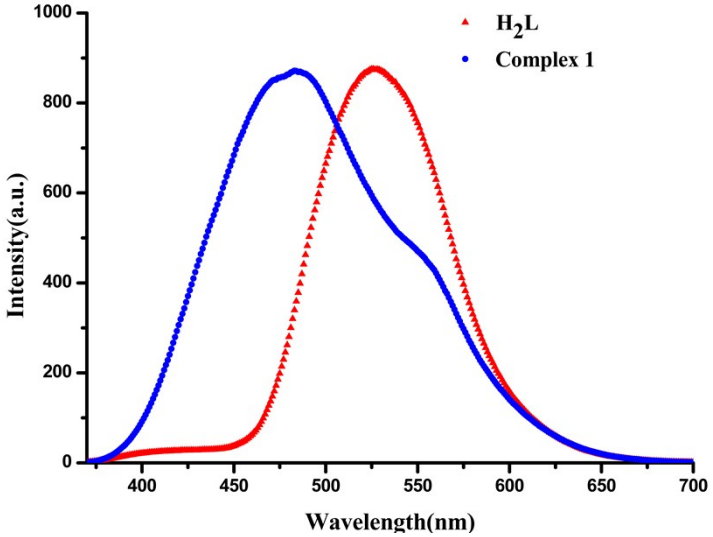

Fig. S6 Room-temperature emission spectra of free ligand and complex **1**.

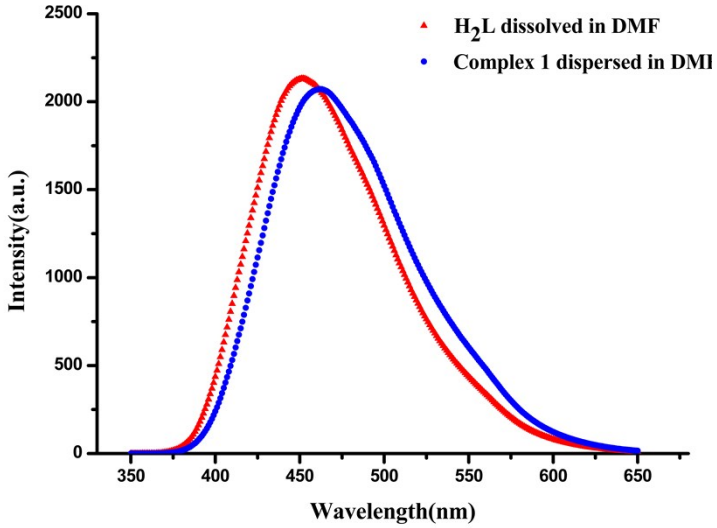

Fig. S7 The emission spectra for H_2L dissolved in DMF and complex **1** dispersed in DMF at room temperature.

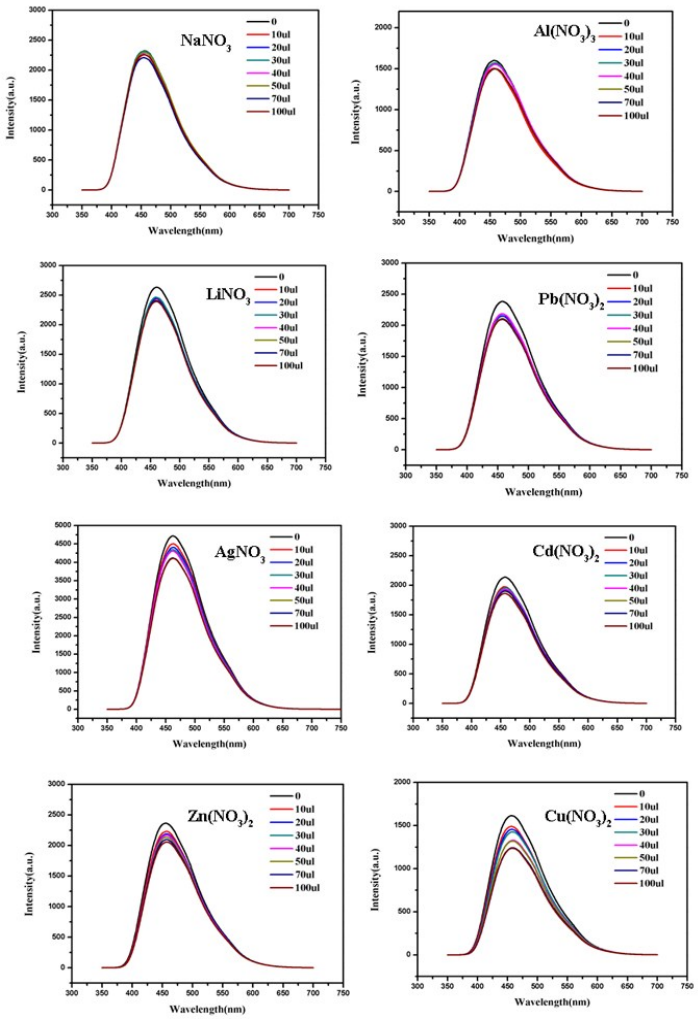

Fig. S8 Emission intensity of complex **1** dispersed in DMF upon incremental addition of a $M(NO_3)_x$ (M= Cu^{2+}, Na^{+}, Al^{3+}, Ag^{+}, Cd^{2+}, Li^{+}, Zn^{2+}, Pb^{2+},) solution (1mM) in DMF.

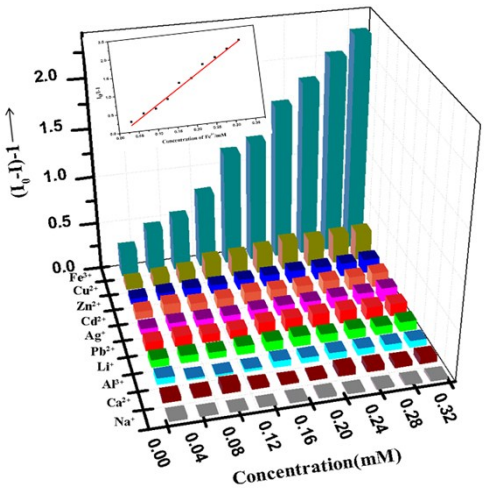

Fig. S9 Corresponding Stern-Volmer plots of analytes. Insert: Stern–Volmer plot of I_0/I-1 versus the Fe^{3+} concentration in DMF.

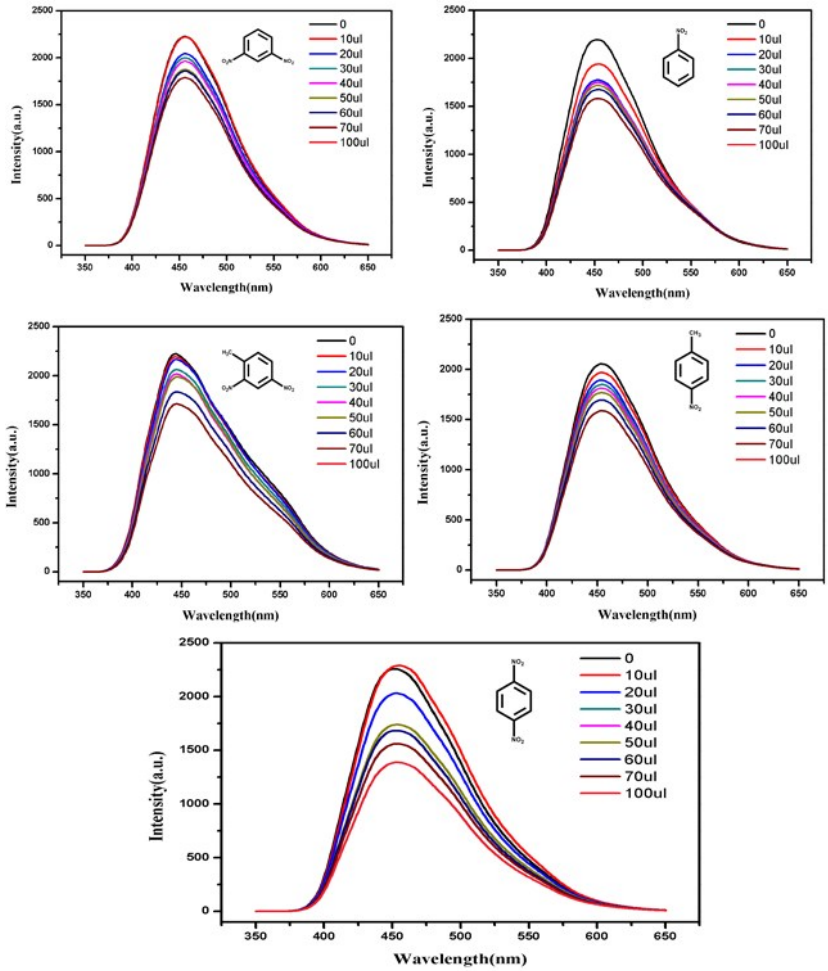

Fig. S10 Effect on the emission spectra of complex **1** dispersed in DMF upon incremental addition of different analyte solutions (1,3-DNB, 2,4-DNT, 1,4-DNB, NB, 1-M-4-NB) solution (1 mM) in DMF

References:

[1] J. Dehaudt, J. Husson, Laurent Guyard, *Green Chem.,* 2011, **13**, 3337 .