Electronic Supplementary Material (ESI) for CrystEngComm.
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Supporting Information

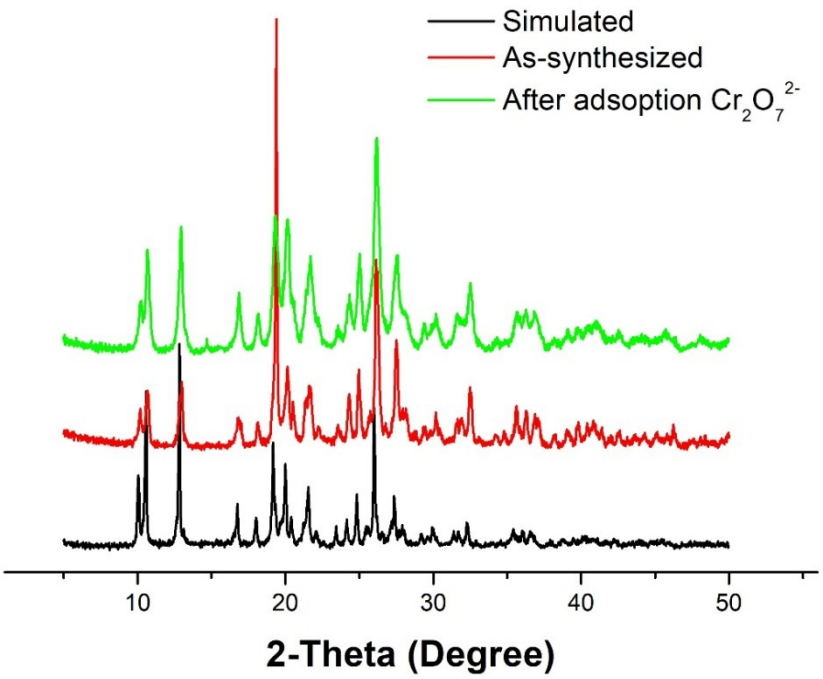

Fig. S1 PXRD profiles for **1**.

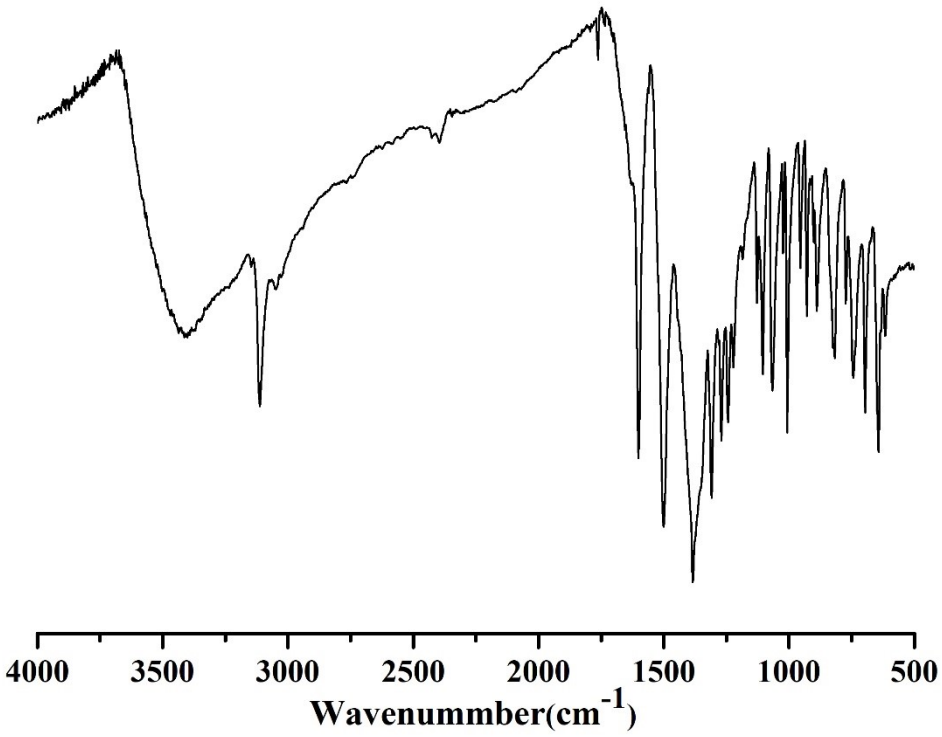

Fig. S2 FTIR spectrum for **1**.

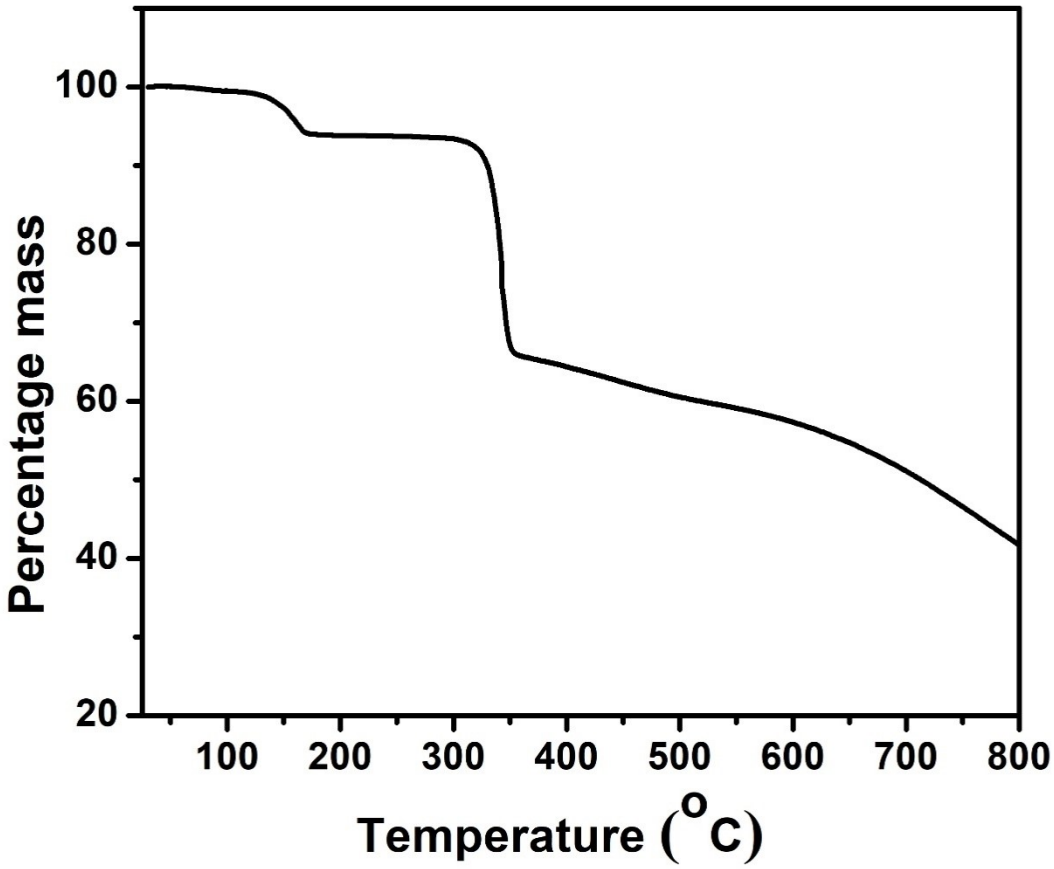

Fig. S3 Thermogravimetric profile for **1**.

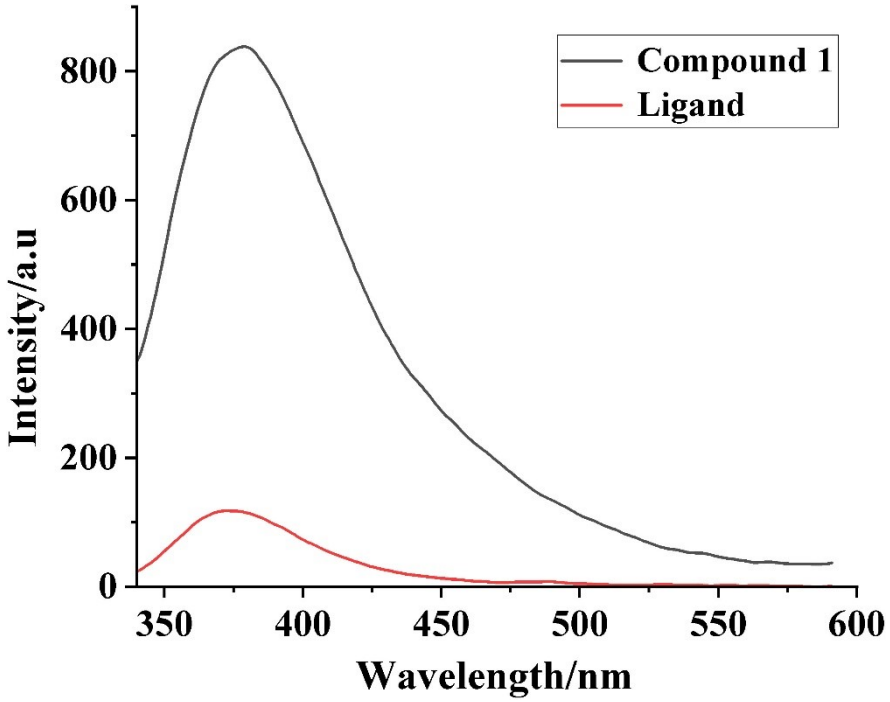

Fig. S4 The photoluminescent spectra for **1** and bip ligand.

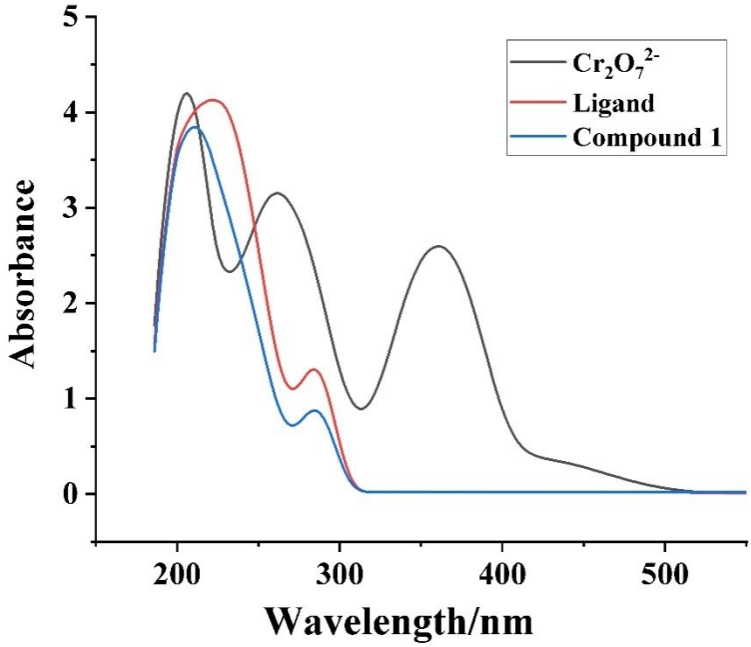

Fig. S5 The spectral overlap between the emission spectra of **1** and bip ligand with the Uv-Vis spectrum of dichromate anion.

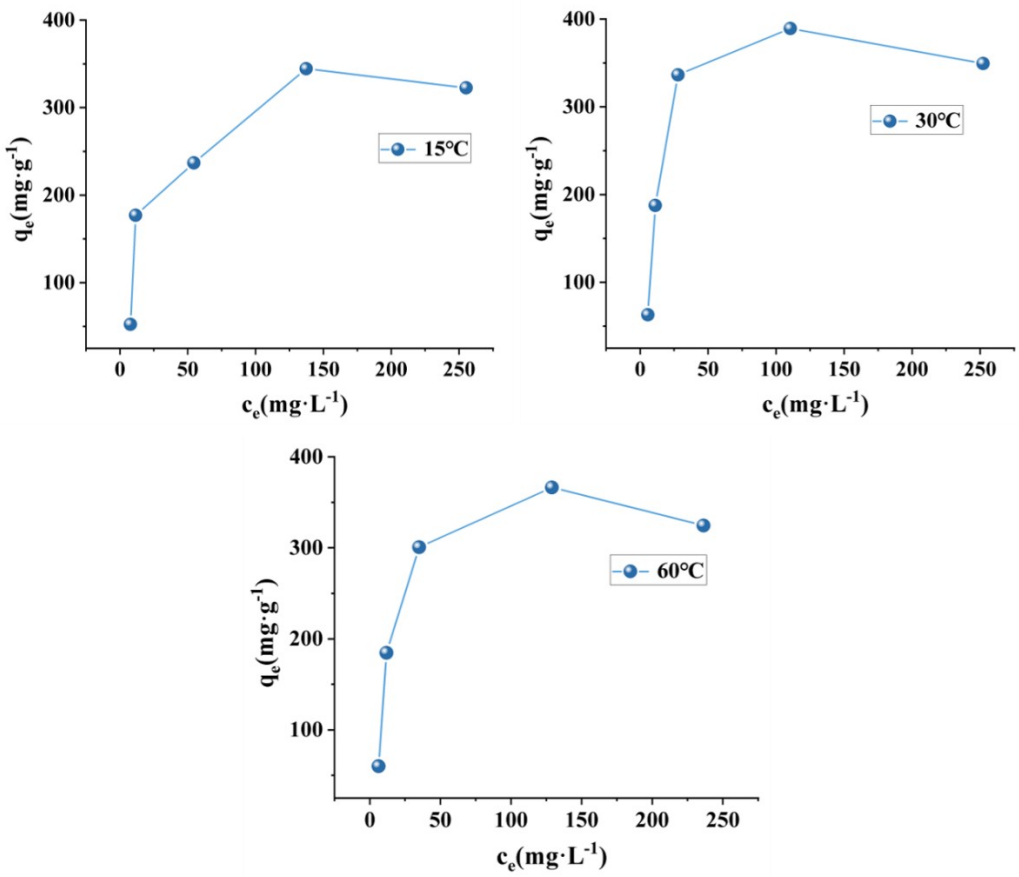

Fig. S6 Adsorption isotherms for dichromate adsorption over 1 at 288, 303 and 333 K

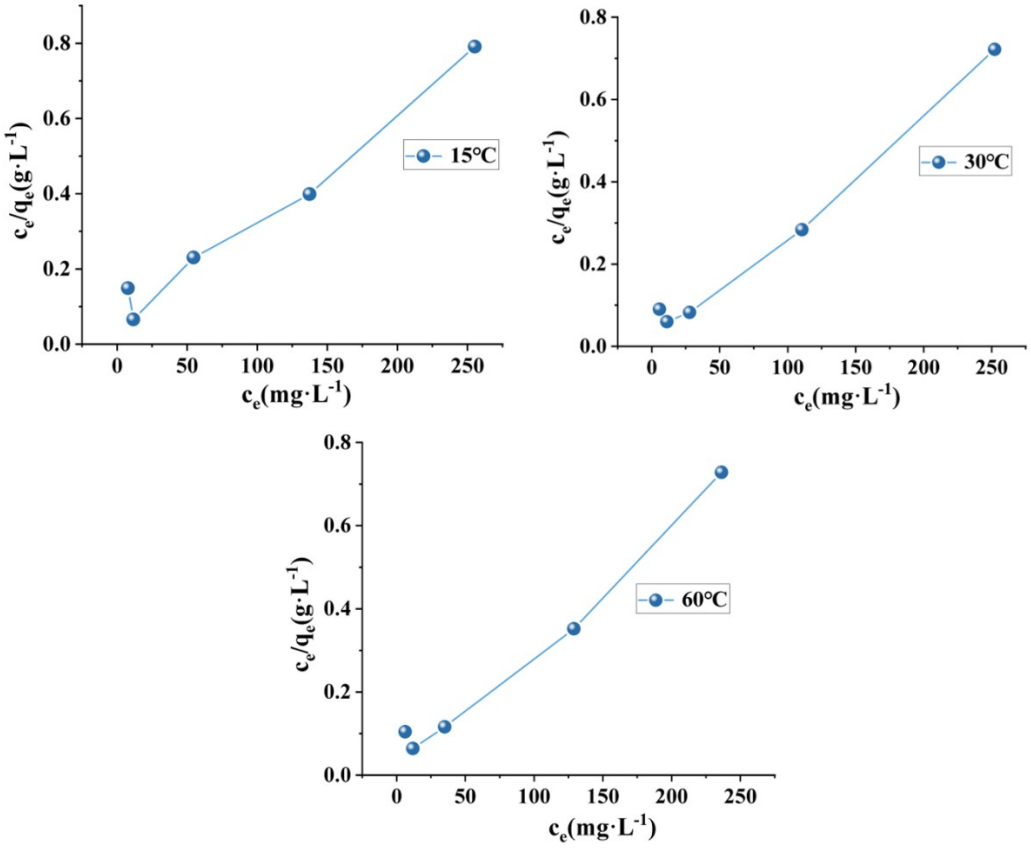

Fig. S7 Adsorption capacity for dichromate adsorption over 1 at 288, 303 and 333 K

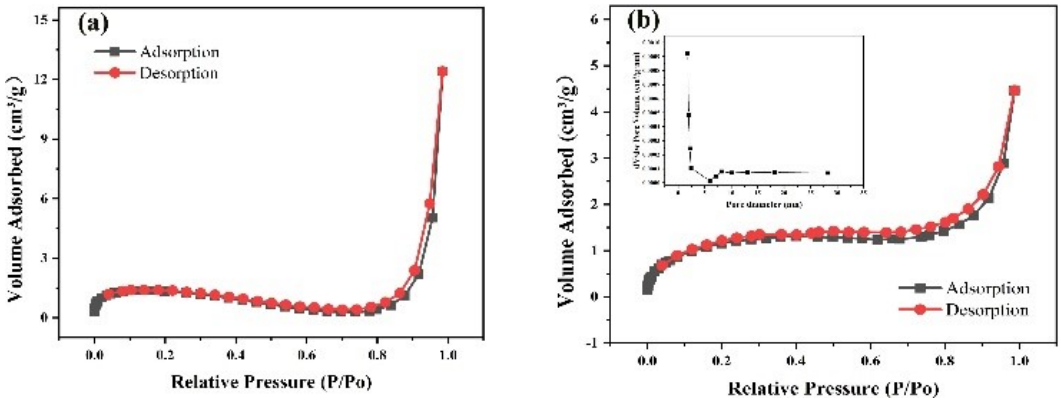

Fig. S8 The BET surface area analyses (a) before and (b) after adoption $Cr_2O_7^{2-}$ anion.

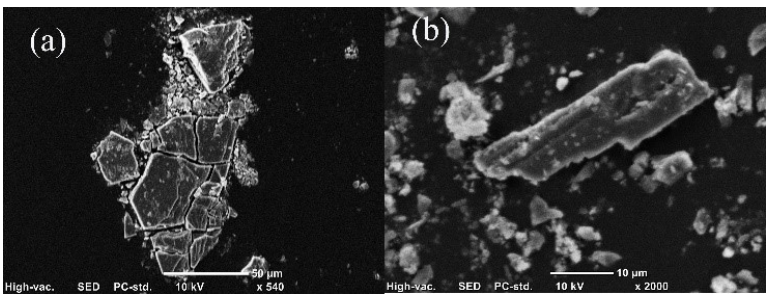

Fig. S9 Scanning electron microscopic images for 1 (a) before adsorption experiments and (b) after adsorption experiments.

Table S1 Sensing performance comparison between other MOF based fluorescent sensors

MOF based fluorescent materials	LOD	Ksv (M^{1})	Ref.
Cd -MOF-1	4.29 μM		This work
Cd LMOF LCU 125	0.085 μM	5.61 x 10^3	1
RhB@9 1 MOF 253 NH_2	0.863 μM	/	2
{[Zn (TTPA)]·1.5 DMA}n	7.48 μM	5.61 × 10^4	3
[Zn_2 ($TzTz)_2$ ($BDC)_2$]·2DMF	4 μM	9 × 10^7	4
Tb MOF	2.92 μM	8.45 × 10^3	5
[Cd_2 (TFBA) (HCOO) (bpe) $H_2O]_n$	235 μM	1.22 × 10^4	6
Cd bdcbpy	/	8.217 × 10^3	7
[Ni BDC MOF	0.159 nM	1.056 × 10^8	8
{[Tb (dppa) ($H_2O)_2$]·dima·H_2O·0.5O}$_n$	0.55 μM	1.9057 × 10^4	9
BUT 25	0.15 μM	6.5×10^4	10
[Zn_2 (tpeb) ($bpdc)_2$]	1.04 μM	1.122 × 10^4	11
[Zn ($OBA)_2$ (L_1) 2DMA]$_n$	3.87 μM	1.8972 ×10^4	12
Eu MOF	/	1.141 × 10^4	13
Tb MOF	/	8.23 × 10^3	13
Zn MOF	0.09 μM	2.003 × 10^4	14
[Ln_4 ($pta)_5$ ($Hpta)_2$ (H_2o_4)] xH_2O	38 μM	1.02 × 10^4	15
{[$(CH_3)_2NH_2]_4$ [$Ca_2Zn_4(L)_4$]·4DMF}n (1)	29.1 μM	1.15 × 10^3	16
{[Ln(dpc)(2H_2O)]·($Hbibp)_{0.5}$}$_n$	10.1 μM	3.97×10^3	17
{[Zn(L)(bpe)0.5]·DMF}n (1)	59.2 ppb	1.1 × 10^4	18
{[Eu_3 ($BTDC)_4$ (HCOO) ($H_2O)_2$]·solvents}n	1.23 μM	/	19
Zn_4O ($ECMTDC)_3$ 10DMF	13.9 μM	7.1 × 10^4	20
[Ln_2 ($L)_3$ ($DMF)_2$ ($H_2O)_4$]·2DMF 1	5.11 μM	1.04 × 10^4	21
[Ln_2 ($L)_3$ ($DMF)_2$ ($H_2O)_4$]·2DMF 2	1.97 μM	1.37 × 10^4	21
[Ln_2 ($L)_3$ ($DMF)_2$ ($H_2O)_4$]·2DMF 3	1.71 μM	2.31 × 10^4	21
[Ln_2 ($L)_3$ ($DMF)_2$ ($H_2O)_4$]·2DMF 4	2.10 μM	2.85 × 10^4	21
Eu^{3+}/DUT-52 COOH	25.7 nM	1.727 × 10^6	22
BUT-MOF	9.0 ppb	3.2 × 10^5	23
Eu-mtb-MMM	5.73 nM	/	24
[Cd (DPTTZ) (5-AIP)] (IUST-1)	0.602 μM	3.314 × 10^4	25
[Zn ($OBA)_2$ (L_1)·2DMA]$_n$	3.87 μM	1.8972 × 10^5	26
MOF-1@MF	0.60 μM	1.5 × 10^4	27

Table S2. Crystallographic data and structure refinement details for 1

Parameter	**1**
Formula	$C_{22}H_{22}CdN_{12}O_8$
Formula weight	694.91
Crystal system	Monoclinic
Space group	$P2_1/n$
a, Å	9.5220(15)
b, Å	10.5289(15)
c, Å	13.8101(19)
α, °	90
β, °	104.454(2)
γ, °	90
V, Å^3	1340.7(3)
Z	2
ρcalcd, g/cm^3	1.721
μ, mm^{-1}	0.886
F(000)	700
θ Range, deg	2.3-27.8
Reflection Collected	7975
Independent reflections (R_{int})	0.035
Reflections with I>2σ(I)	2245
Number of parameters	197
R1, wR2 (I>2σ(I))*	0.0371, 0.1053
R1, wR2(all data)**	0.0603, 0.1272

* $R = \sum(F_o - F_c)/\sum(F_o)$, ** $wR_2 = \{\sum[w(F_o^2 - F_c^2)^2]/\sum(F_o^2)^2\}^{1/2}$

Table S3. Selected bond distances (Å) and angles (deg) for **1**

		1	
Cd(1) -O(1)	2.319(3)	Cd(1)-N(1)	2.339(3)
Cd(1)-N(5)#1	2.319(3)	Cd(1)-O(1)#2	2.319(3)
Cd(1)-N(1)#2	2.339(3)	Cd(1)-N(5)#3	2.319(3)
		1	
O(1)-Cd(1)-N(1)	95.67(10)	O(1)-Cd(1)-N(5)#1	88.22(10)
O(1)-Cd(1)-O(1)#2	180.00	O(1)-Cd(10-N(1)#2	84.33(10)
O(1)-Cd(1)-N5#3	91.78(10)	N(1)-Cd(1)-N(5)#1	87.50(11)
O(1)#2-Cd(1)-N(1)	84.33(10)	N(1)-Cd(1)-N(1)#2	180.00
N(1)-Cd(1)-N(5)#3	92.50(11)	O(1)#2-Cd(1)-N(5)#1	91.78(10)
N(1)#2-Cd(1)-N(5)#1	92.50(11)	N(5)#1-Cd(1)-N(5)#3	180.00
O(1)#2-Cd(1)-N(1)#2	95.67(10)	O(1)#2-Cd(1)-N(5)#3	88.22(10)
N(1)#2-Cd(1)-N(5)#3	87.50(11)		

Symmetry Code: #1= 1/2-x, 1/2+y, 3/2-z; #2= 1-x, 1-y, 1-z; #3= 1/2+x, 1/2-y, -1/2+z.

Table S4. Selected hydrogen bond distances (Å) and angles (deg) for **1**

Contact	Distance, Å			Angle
D-H···A	D-H	H···A	D···A	D-H···A, deg
O(1)-H(1A)···N(3)	0.8500	1.8800	2.718(4)	167.00
O(1)-H(1B)···O(2)	0.8500	1.9800	2.809(5)	164.00
C(2)-H(2)···O(4)	0.9300	2.5800	3.423(6)	151.00
C(8)-H(8)···O(4)	0.9300	2.5400	3.450(5)	168.00
C(9)-H(9)···O(3)	0.9300	2.5900	3.257(8)	129.00

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