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Table S1 Selected bond lengths (Å) of complexes 1 and 3–8[a]

1							
Zn(1)-O(1)	1.953(3)	Zn(1)-Zn(1)#1	2.962(2)	Zn(1)-O(3)#2	2.031(3)	Zn(2)-O(2)	1.955(4)
Zn(1)-O(6)#1	2.024(4)	Zn(2)-O(7)	1.951(4)	Zn(1)-O(4)#3	2.044(3)	Zn(1)-O(5)	2.076(3)
3				**4**			
Zn(1)-O(8)#1	1.896(7)	Zn(2)-O(2)	2.021(7)	Zn(1)-O(3)#3	1.931(6)	Zn(2)-O(4)#3	2.003(6)
Zn(1)-O(1)	1.937(7)	Zn(2)-O(4)#1	2.118(7)	Zn(1)-O(5)	1.936(5)	Zn(2)-O(7)#2	2.016(6)
Zn(1)-O(5)	1.966(6)	Zn(2)-N(2)	2.118(8)	Zn(1)-O(1)	1.950(6)	Zn(2)-N(2)	2.123(8)
Zn(1)-N(1)#2	2.020(7)	Zn(2)-O(3)#1	2.191(7)	Zn(1)-N(1)#4	2.035(7)	Zn(2)-O(8)#2	2.366(6)
Zn(2)-O(7)#1	2.007(7)	Zn(2)-O(5)	2.423(6)	Zn(2)-O(6)	1.992(6)	Zn(2)-O(1)	2.436(7)
5				**6**			
Zn(1)-O(7)#1	2.036(2)	Zn(1)-O(6)	2.343(3)	Cd(1)-N(1)	2.298(3)		
Zn(1)-O(4)#2	2.038(2)	Zn(2)-O(8)#1	1.926(2)	Cd(1)-O(1)	2.312(3)		
Zn(1)-O(5)	2.045(2)	Zn(2)-O(3)#2	1.947(2)	Cd(1)-O(2)	2.350(4)		
Zn(1)-N(1)#3	2.113(3)	Zn(2)-O(1)	1.978(2)				
Zn(1)-O(1)	2.256(2)	Zn(2)-N(2)	2.014(3)				
7				**8**			
Cd(1)-O(1)	2.255(3)	Cd(1)-O(5)#2	2.388(3)	Cd(1)-O(5)	2.292(7)	N(3)-Cd(2)#2	2.297(9)
Cd(1)-O(2)	2.283(3)	Cd(1)-O(4)#2	2.400(3)	Cd(1)-N(2)	2.334(9)	N(4)-Cd(2)#3	2.327(8)
Cd(1)-N(1)	2.354(4)	Cd(1)-O(3)	2.642(3)	Cd(1)-N(1)	2.336(9)	O(8)-Cd(2)#5	2.331(8)
Cd(1)-N(2)#1	2.369(4)	Cd(2)-O(6)	2.234(3)	Cd(1)-O(3)#1	2.372(9)	O(5)-Cd(2)	2.405(7)
Cd(2)-O(13)#3	2.309(3)	Cd(2)-N(4)#1	2.347(4)	Cd(1)-O(1)	2.382(7)	Cd(2)-O(7)#6	2.406(8)
Cd(2)-O(3)	2.362(3)	Cd(2)-O(14)#3	2.510(3)	Cd(1)-O(2)	2.439(7)	O(6)-Cd(2)	2.474(7)
Cd(2)-N(3)	2.373(4)	Cd(3)-O(8)	2.225(4)	Cd(2)-O(4)#2	2.315(8)		
Cd(3)-O(7)#4	2.242(4)	Cd(3)-O(10)	2.302(4)				
Cd(3)-O(11)	2.295(4)	Cd(3)-O(12)	2.342(4)				
Cd(3)-O(9)	2.554(4)						

[a] Symmetry codes: **1** :#1 -x+1/2,-y+1/2,-z+1; #2 x,-y,z+1/2; #3 -x+1/2,y+1/2,-z+1/2. **3**: #1 x,-y+1,z-1/2; #2 x+1,y,z+1. **4**: #2 -x+1,-y+2,-z+1; #3 -x,-y+1,-z; #4 x,y-1,z-1. **5:** #1 -x+1,-y+1,-z; #2 -x+2,-y+2,-z+1; #3 x,y-1,z-1. **7**: #1 x+1,y+1,z; #2 -x+1,-y+1,-z+1; #3 -x+1,-y+1,-z+2; #4 x-1,y,z. **8**: #1 -x,y-1/2,-z+3/2; #2 x+1,y,z; #3 -x+1,y+1/2,-z+3/2; #5 -x+1,y+1/2,-z+3/2; #6 -x+1,y-1/2,-z+3/2.

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Table S2. Selected bond angles (°) of complexes 1 and 3–8 [a]

1							
O(1)-Zn(1)-O(6)#1	111.06(15)	O(3)#2-Zn(1)-O(5)	86.84(14)	O(1)-Zn(1)-O(5)	89.55(14)	O(7)#4-Zn(2)-O(7)	106.4(2)
O(1)-Zn(1)-O(3)#2	101.55(15)	O(4)#3-Zn(1)-O(5)	87.41(15)	O(6)#1-Zn(1)-O(5)	159.39(14)	O(7)#4-Zn(2)-O(2)	103.77(17)
O(6)#1-Zn(1)-O(3)#2	89.47(15)	O(7)-Zn(2)-O(2)	121.02(16)	O(3)#2-Zn(1)-O(4)#3	159.20(15)	O(2)-Zn(2)-O(2)#4	102.0(2)
O(1)-Zn(1)-O(4)#3	98.37(15)	O(7)#4-Zn(2)-O(2)#4	121.02(16)	O(6)#1-Zn(1)-O(4)#3	88.91(15)	O(7)-Zn(2)-O(2)#4	103.77(17)
3							
O(8)#1-Zn(1)-O(1)	105.7(3)	O(7)#1-Zn(2)-O(4)#1	97.4(3)	O(4)#1-Zn(2)-O(3)#1	60.4(3)	O(7)#1-Zn(2)-O(2)	103.6(3)
O(8)#1-Zn(1)-O(5)	118.0(3)	O(2)-Zn(2)-O(4)#1	158.4(3)	N(2)-Zn(2)-O(3)#1	89.4(3)	O(2)-Zn(2)-O(3)#1	98.4(3)
O(1)-Zn(1)-O(5)	106.6(3)	O(7)#1-Zn(2)-N(2)	93.9(3)	O(7)#1-Zn(2)-O(5)	93.8(3)	O(3)#1-Zn(2)-O(5)	84.0(2)
O(8)#1-Zn(1)-N(1)#2	106.3(3)	O(2)-Zn(2)-N(2)	90.2(3)	O(2)-Zn(2)-O(5)	86.8(2)		
O(1)-Zn(1)-N(1)#2	105.8(3)	O(4)#1-Zn(2)-N(2)	93.3(3)	O(4)#1-Zn(2)-O(5)	87.0(2)		
O(5)-Zn(1)-N(1)#2	113.5(3)	O(7)#1-Zn(2)-O(3)#1	157.7(3)	N(2)-Zn(2)-O(5)	172.2(3)		
4				**5**			
O(3)#3-Zn(1)-O(5)	116.7(3)	O(7)#2-Zn(2)-N(2)	97.6(3)	O(7)#1-Zn(1)-O(4)#2	111.35(10)	O(4)#2-Zn(1)-O(6)	93.92(9)
O(3)#3-Zn(1)-O(1)	105.4(3)	O(6)-Zn(2)-O(8)#2	154.6(2)	O(7)#1-Zn(1)-O(5)	95.50(10)	O(5)-Zn(1)-O(6)	59.46(9)
O(5)-Zn(1)-O(1)	113.2(2)	O(4)#3-Zn(2)-O(8)#2	92.5(2)	O(4)#2-Zn(1)-O(5)	152.41(10)	N(1)#3-Zn(1)-O(6)	87.97(10)
O(3)#3-Zn(1)-N(1)#4	103.9(3)	O(7)#2-Zn(2)-O(8)#2	59.0(2)	O(7)#1-Zn(1)-N(1)#3	92.42(10)	O(1)-Zn(1)-O(6)	94.25(8)
O(5)-Zn(1)-N(1)#4	108.9(3)	N(2)-Zn(2)-O(8)#2	88.7(2)	O(4)#2-Zn(1)-N(1)#3	87.98(10)	O(8)#1-Zn(2)-O(3)#2	117.97(10)
O(1)-Zn(1)-N(1)#4	107.9(3)	O(6)-Zn(2)-O(1)	89.7(2)	O(5)-Zn(1)-N(1)#3	97.43(10)	O(8)#1-Zn(2)-O(1)	111.24(10)
O(6)-Zn(2)-O(4)#3	112.4(3)	O(4)#3-Zn(2)-O(1)	84.8(2)	O(7)#1-Zn(1)-O(1)	88.80(9)	O(3)#2-Zn(2)-O(1)	106.08(10)
O(6)-Zn(2)-O(7)#2	95.6(3)	O(7)#2-Zn(2)-O(1)	85.7(2)	O(4)#2-Zn(1)-O(1)	84.32(9)	O(8)#1-Zn(2)-N(2)	109.87(11)
O(4)#3-Zn(2)-O(7)#2	150.3(2)	N(2)-Zn(2)-O(1)	172.7(2)	O(5)-Zn(1)-O(1)	90.21(9)	O(3)#2-Zn(2)-N(2)	103.29(11)
O(6)-Zn(2)-N(2)	96.3(3)	O(8)#2-Zn(2)-O(1)	87.6(2)	N(1)#3-Zn(1)-O(1)	172.11(10)	O(1)-Zn(2)-N(2)	107.71(11)
O(4)#3-Zn(2)-N(2)	89.2(3)			O(7)#1-Zn(1)-O(6)	154.73(9)		
6							
N(1)#1-Cd(1)-N(1)	93.17(17)	N(1)#1-Cd(1)-O(2)	108.31(15)	N(1)-Cd(1)-O(1)	135.59(11)	N(1)-Cd(1)-O(2)	81.99(12)
N(1)#1-Cd(1)-O(1)#1	135.59(11)	O(1)-Cd(1)-O(2)	53.62(11)	O(1)#1-Cd(1)-O(1)	96.9(2)	O(1)#1-Cd(1)-O(2)	115.10(14)
N(1)-Cd(1)-O(1)#1	101.41(13)	O(1)#1-Cd(1)-O(2)	115.10(14)	N(1)#1-Cd(1)-O(2)#1	81.99(12)	O(1)-Cd(1)-O(2)	53.62(11)
N(1)#1-Cd(1)-O(1)	101.41(13)	N(1)#1-Cd(1)-O(2)	108.31(15)				
7				**8**			
O(1)-Cd(1)-O(2)	134.78(11)	N(4)#1-Cd(2)-O(3)	90.36(12)	O(5)-Cd(1)-N(2)	102.1(3)	N(3)#3-Cd(2)-N(4)#2	171.4(4)
O(1)-Cd(1)-N(1)	88.61(13)	O(13)#3-Cd(2)-N(3)	89.14(12)	O(5)-Cd(1)-N(1)	94.4(3)	O(4)#1-Cd(2)-O(8)#6	87.2(4)
O(2)-Cd(1)-N(1)	91.09(12)	O(3)-Cd(2)-N(3)	89.94(12)	N(2)-Cd(1)-N(1)	163.3(3)	N(3)#3-Cd(2)-O(8)#6	88.9(3)
O(1)-Cd(1)-N(2)#1	92.20(14)	O(3)-Cd(2)-O(14)#3	83.82(10)	O(5)-Cd(1)-O(3)#1	112.7(3)	N(4)#2-Cd(2)-O(8)#6	92.9(3)
O(2)-Cd(1)-N(2)#1	86.21(13)	O(8)-Cd(3)-O(7)#4	97.88(14)	N(2)-Cd(1)-O(3)#1	86.5(3)	O(4)#1-Cd(2)-O(5)	77.2(4)
N(1)-Cd(1)-N(2)#1	176.90(14)	O(8)-Cd(3)-O(11)	143.94(14)	N(1)-Cd(1)-O(3)#1	84.6(3)	N(3)#3-Cd(2)-O(5)	86.8(3)
O(1)-Cd(1)-O(5)#2	82.45(11)	O(7)#4-Cd(3)-O(11)	118.09(14)	O(5)-Cd(1)-O(1)	93.6(3)	N(4)#2-Cd(2)-O(5)	93.8(3)
O(2)-Cd(1)-O(5)#2	142.34(11)	O(8)-Cd(3)-O(10)	98.36(14)	N(2)-Cd(1)-O(1)	85.0(3)	O(8)#6-Cd(2)-O(5)	163.4(3)
O(2)-Cd(1)-O(4)#2	89.76(11)	O(7)#4-Cd(3)-O(10)	79.82(13)	N(1)-Cd(1)-O(1)	96.8(3)	O(4)#1-Cd(2)-O(7)#6	141.6(4)
N(1)-Cd(1)-O(4)#2	85.45(12)	O(11)-Cd(3)-O(10)	90.96(13)	O(3)#1-Cd(1)-O(1)	153.5(3)	N(3)#3-Cd(2)-O(7)#6	87.6(3)
O(5)#2-Cd(1)-O(4)#2	54.27(10)	O(7)#4-Cd(3)-O(12)	115.32(15)	O(5)-Cd(1)-O(2)	146.8(3)	N(4)#2-Cd(2)-O(7)#6	86.7(3)
O(1)-Cd(1)-O(3)	82.61(10)	O(11)-Cd(3)-O(12)	55.67(13)	N(2)-Cd(1)-O(2)	84.5(3)	O(8)#6-Cd(2)-O(7)#6	54.5(3)
O(2)-Cd(1)-O(3)	52.26(10)	O(10)-Cd(3)-O(12)	146.59(14)	N(1)-Cd(1)-O(2)	83.2(3)	O(5)-Cd(2)-O(7)#6	141.2(3)
O(6)-Cd(2)-O(13)#3	121.43(11)	O(8)-Cd(3)-O(9)	54.26(13)	O(3)#1-Cd(1)-O(2)	100.0(3)	O(4)#1-Cd(2)-O(6)	130.1(4)
O(6)-Cd(2)-N(4)#1	88.83(13)	O(7)#4-Cd(3)-O(9)	148.08(13)	O(1)-Cd(1)-O(2)	54.2(3)	N(3)#3-Cd(2)-O(6)	85.9(3)
O(13)#3-Cd(2)-N(4)#1	91.13(12)	O(11)-Cd(3)-O(9)	91.53(13)	N(3)#3-Cd(2)-O(4)#1	95.3(4)	N(4)#2-Cd(2)-O(6)	87.6(3)

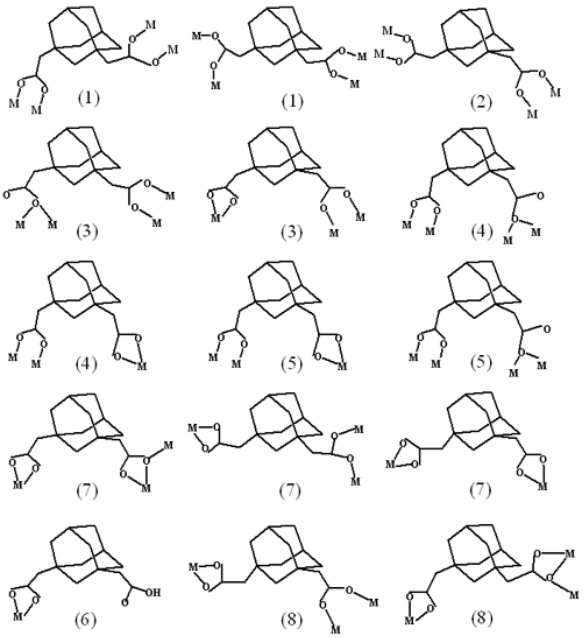
O(6)-Cd(2)-O(3)	101.75(11)	O(12)-Cd(3)-O(9)	90.49(15)	O(4)#1-Cd(2)-N(4)#2	93.2(3)	O(5)-Cd(2)-O(6)	53.0(2)

[a] Symmetry codes: **1**: #1 -x+1/2,-y+1/2,-z+1; #2 x,-y,z+1/2; #3 -x+1/2,y+1/2,-z+1/2; #4 -x+1,y,-z+3/2. **3**: #1 x,-y+1,z-1/2; #2 x+1,y,z+1. **4**: #2 -x+1,-y+2,-z+1; #3 -x,-y+1,-z; #4 x,y-1,z-1. **5**: #1 -x+1,-y+1,-z; #2 -x+2,-y+2,-z+1; #3 x,y-1,z-1. **6**: #1 -x,y,-z+1/2. **7**: #1 x+1,y+1,z; #2 -x+1,-y+1,-z+1; #3 -x+1,-y+1,-z+2; #4 x-1,y,z. **8**: #1 -x,y-1/2,-z+3/2; #2 x+1,y,z; #3 -x+1,y+1/2,-z+3/2; #6 -x+1,y-1/2,-z+3/2.

Table S3. Possible hydrogen bond geometries for complexes 6 [a]

Complex	D–H···A (Å)	D–H (Å)	H···A (Å)	D···A (Å)	<DHA (°)
6	O(4)-H(4)...O(2)#3	0.82	1.86	2.661(6)	164.5

[a] Symmetry codes: **6**: #3 x,-y+1,z+1/2.



Scheme S1 Coordination modes and configurations of ADA ligands observed in **1**–**8**.

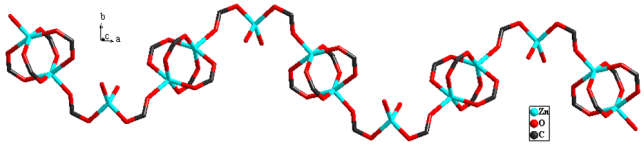


Figure S1 View of a 1D infinite Zn–O–C–O–Zn chains running along the *a* direction.

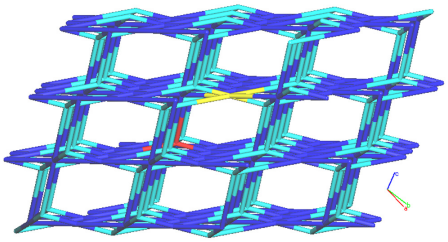


Figure S2 The 3-D net with 4,6-connected vertices of **1**.

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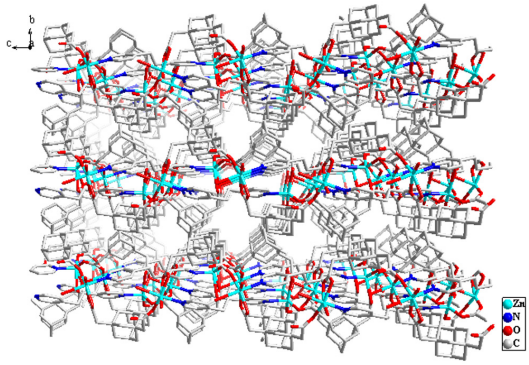

Figure S3 View of the parallel offset 2D layers in **3** by weak van der Waals interactions.

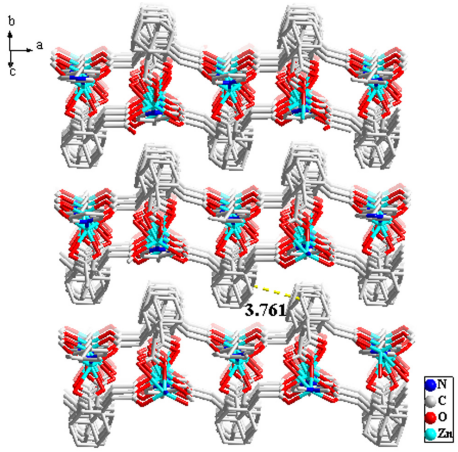

Figure S4 View of the parallel offset 2D layers in **4** by weak van der Waals interactions.

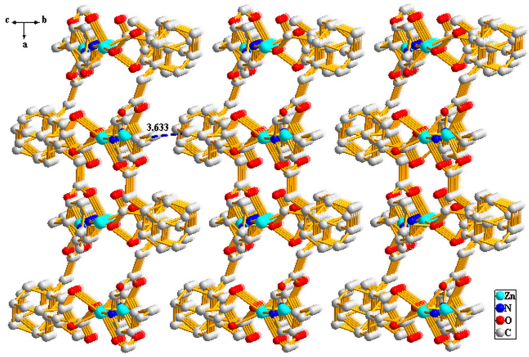

Figure S5 View of the parallel offset 2D layers in **5** by weak van der Waals interactions.

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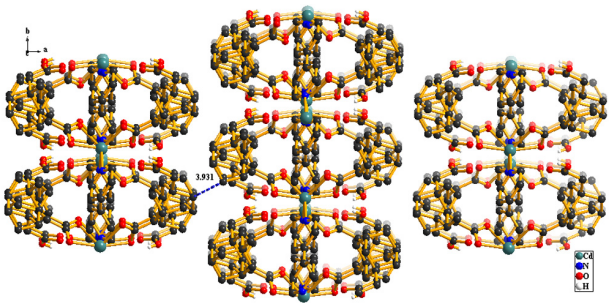

Figure S6 View of the parallel offset 2D layers in **6** by weak van der Waals interactions.

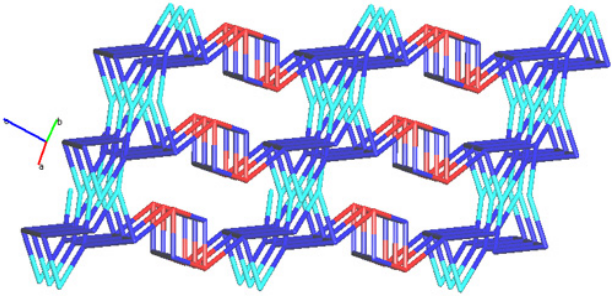

Figure S7 View of the topology of **7**.

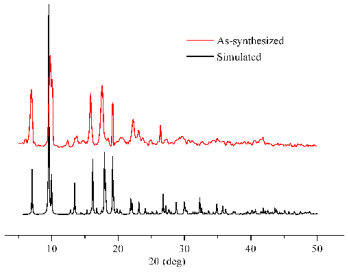

Figure S8

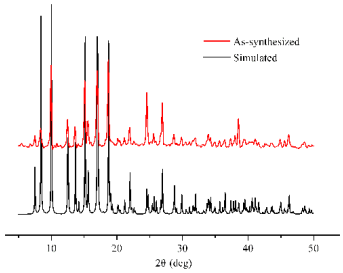

Figure S9

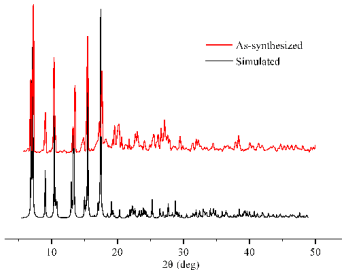

Figure S10

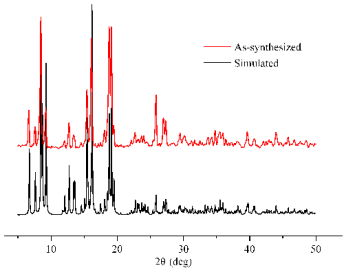

Figure S11

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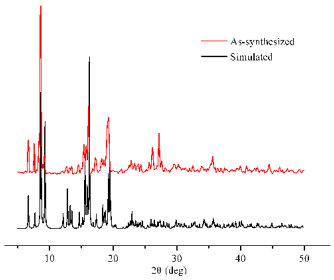

Figure S12

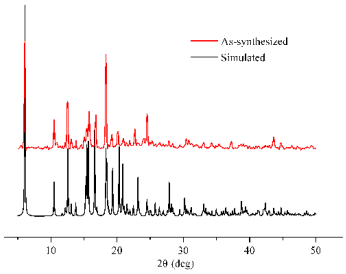

Figure S13

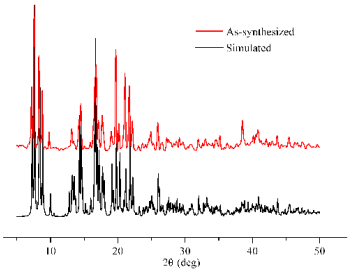

Figure S14

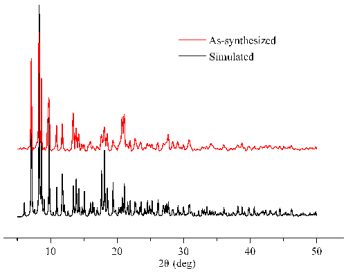

Figure S15

Figure S8-S15 Comparison of XRPD patterns of the simulated pattern from the single–crystal structure determination and as-synthesized product of **1**–**8**.

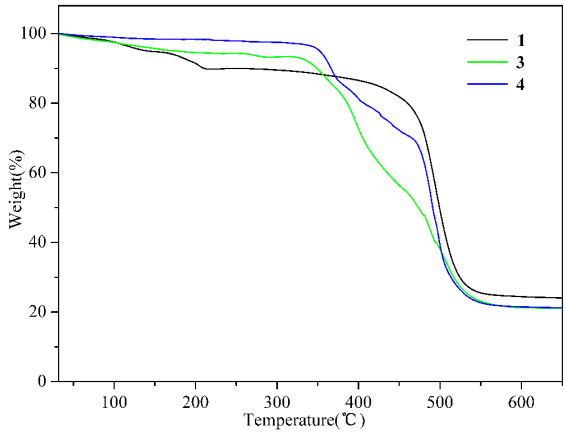

Figure S16 TG graphs of complexes **1, 3** and **4**

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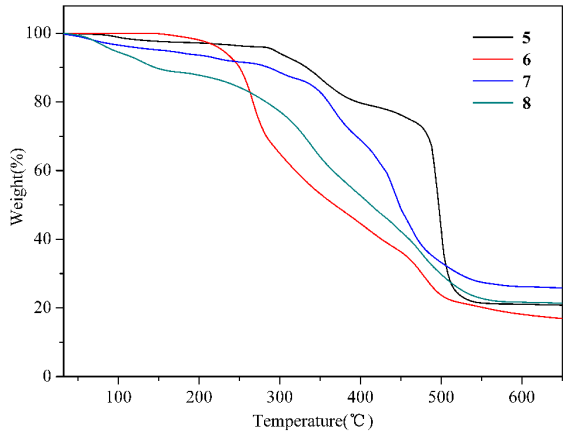

Figure S17 TG graphs of complexes **5–8**

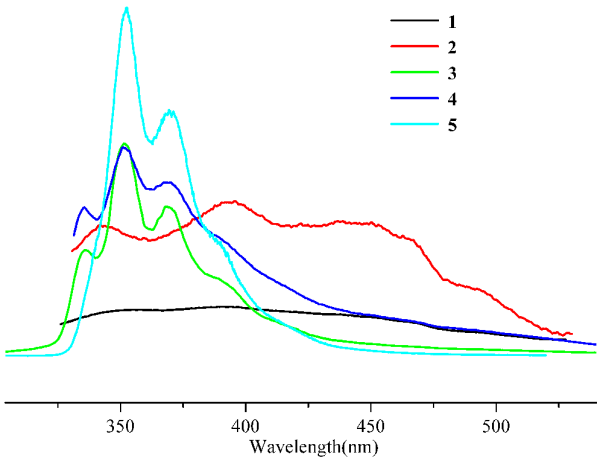

Figure S18 Fluorescence spectra of complexes **1–5** in the solid state at room temperature.

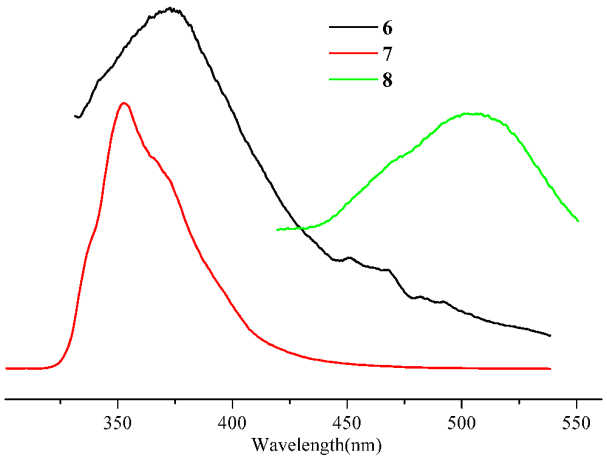

Figure S19 Fluorescence spectra of complexes **6–8** in the solid state at room temperature.