

Electronic Supporting Information

A series of coordination polymers based on a new 2', 5'-dimethyl-1, 1' : 4', 1''-terphenyl-3, 3''-dicarboxylic acid ligand: structures, luminescence, and magnetic properties

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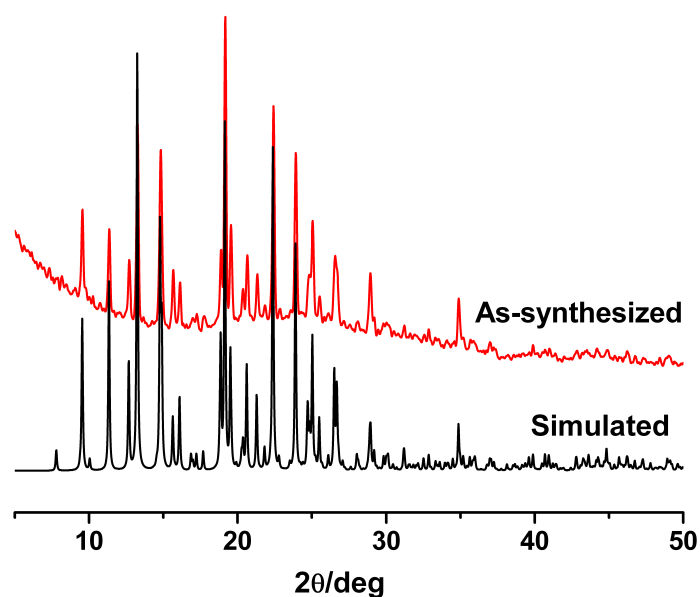


Fig. S1 PXRD of Complex 1.

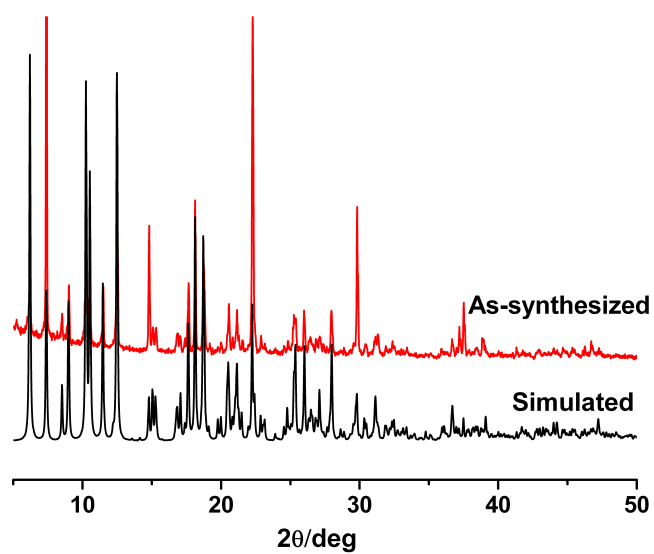


Fig. S2 PXRD of Complex 2.

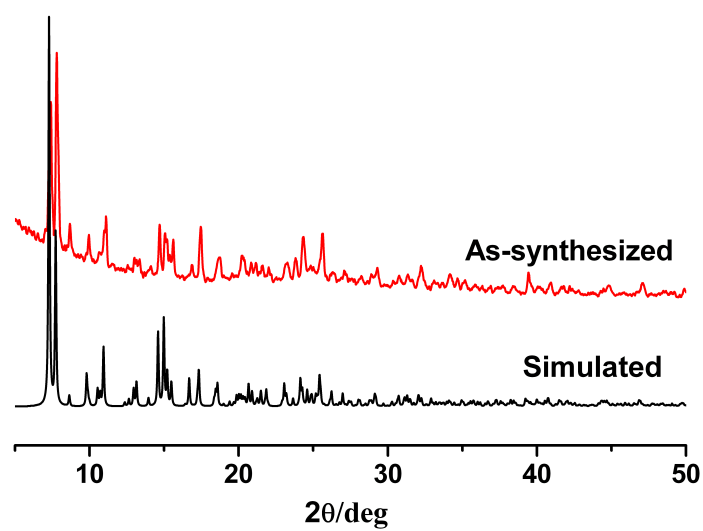


Fig. S3 PXRD of Complex 3.

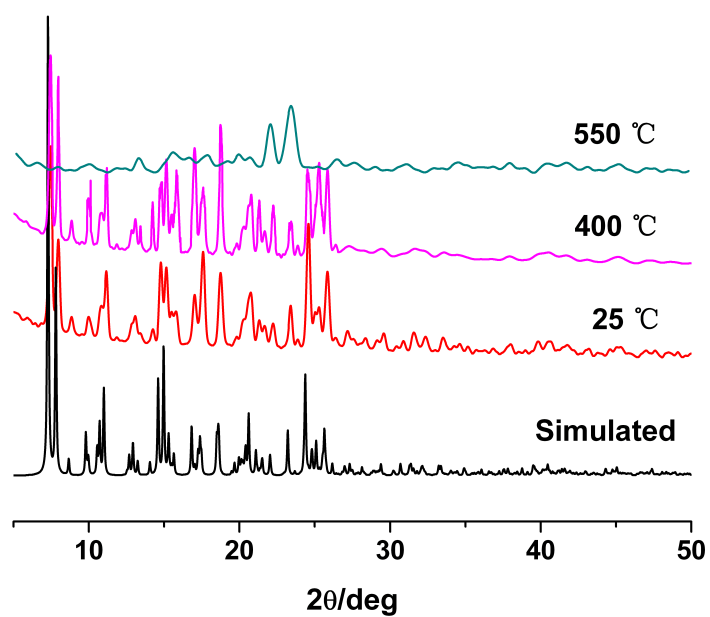


Fig. S4 Temperature-dependence PXR D patterns for Complex 4.

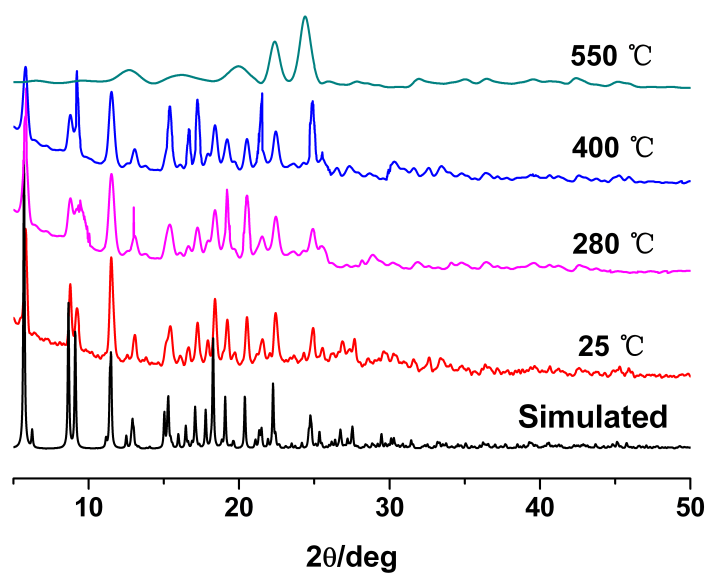


Fig. S5 Temperature-dependence PXR D patterns for Complex 5.

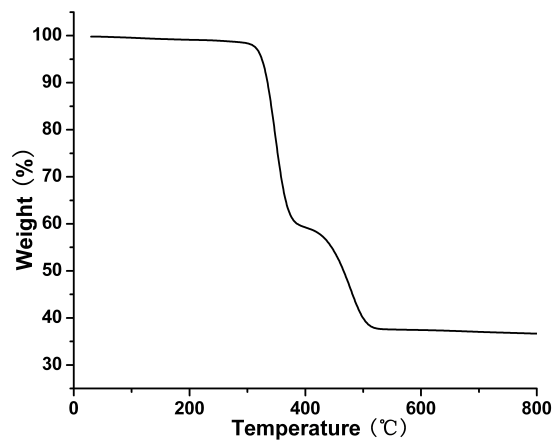


Fig. S6 TGA plot for Complex 1.

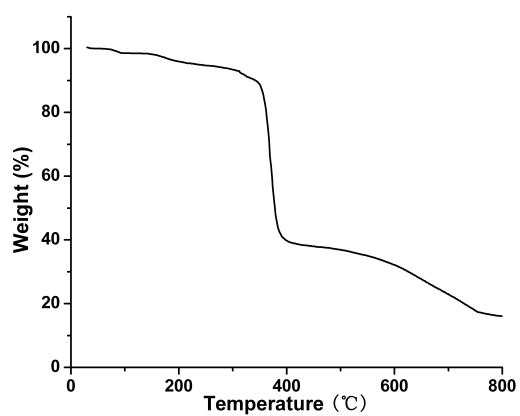


Fig. S7 TGA plot for Complex 2.

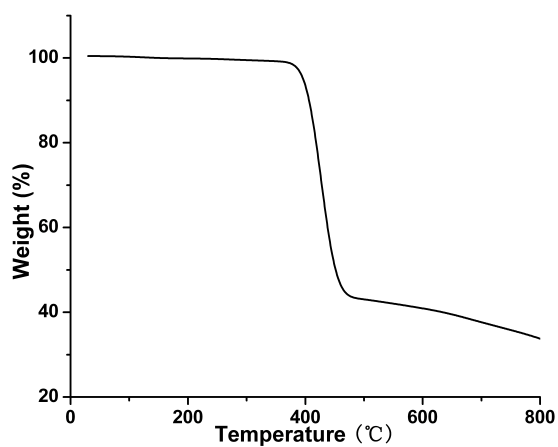


Fig. S8 TGA plot for Complex 3.

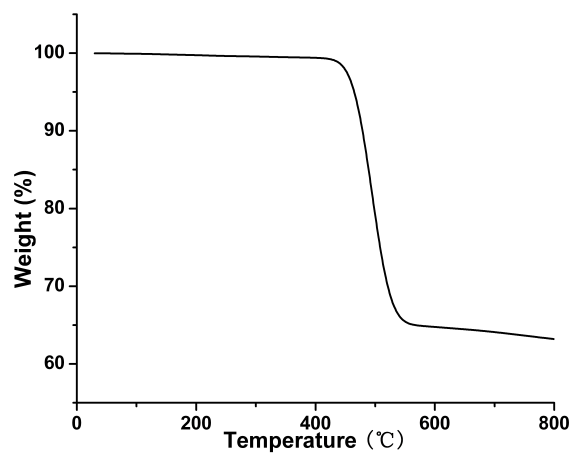


Fig. S9 TGA plot for Complex 4.

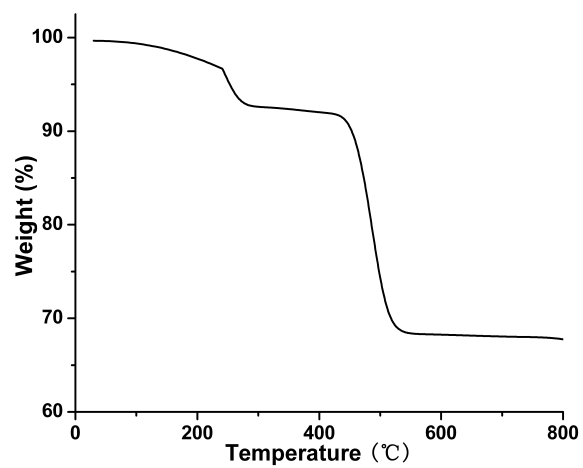


Fig. S10 TGA plot for Complex 5.

Table S1. Selected bond lengths (Å) and angles (deg) for **1-5**⁴

Complex 1			
Mn(1)-O(1)	2.134(5)	Mn(1)-O(3)	2.142(5)
Mn(1)-N(4)	2.242(8)	Mn(1)-N(7)	2.243(7)
Mn(1)-N(8)	2.275(7)	Mn(1)-N(1)	2.303(8)
O(1)-Mn(1)-O(3)	176.9(2)	O(1)-Mn(1)-N(4)	95.6(2)
O(3)-Mn(1)-N(4)	87.2(2)	O(1)-Mn(1)-N(7)	90.2(2)
O(3)-Mn(1)-N(7)	88.3(2)	N(4)-Mn(1)-N(7)	91.7(3)
O(1)-Mn(1)-N(8)	88.5(2)	O(3)-Mn(1)-N(8)	92.9(2)
N(4)-Mn(1)-N(8)	90.7(3)	N(7)-Mn(1)-N(8)	177.4(3)
O(1)-Mn(1)-N(1)	88.0(3)	O(3)-Mn(1)-N(1)	89.3(3)
N(4)-Mn(1)-N(1)	175.5(3)	N(7)-Mn(1)-N(1)	91.1(3)
N(8)-Mn(1)-N(1)	86.6(3)		
Complex 2			
Cd(1)-N(1)	2.303(5)	Cd(1)-N(3)	2.292(5)
Cd(1)-O(1)	2.304(4)	Cd(1)-O(4)#1	2.370(3)
Cd(1)-O(3)	2.419(4)	Cd(1)-O(3)#1	2.478(4)
Cd(1)-O(2)	2.541(4)	N(1)-Cd(1)-N(3)	166.88(17)
N(1)-Cd(1)-O(1)	86.21(16)	N(3)-Cd(1)-O(1)	83.39(16)
N(1)-Cd(1)-O(4)#1	104.47(16)	N(3)-Cd(1)-O(4)#1	88.64(16)
O(1)-Cd(1)-O(4)#1	138.37(15)	N(1)-Cd(1)-O(3)	89.06(16)
N(3)-Cd(1)-O(3)	84.06(15)	O(1)-Cd(1)-O(3)	95.77(14)
O(4)#1-Cd(1)-O(3)	124.02(14)	N(1)-Cd(1)-O(3)#1	91.69(15)
N(3)-Cd(1)-O(3)#1	96.89(15)	O(1)-Cd(1)-O(3)#1	168.39(14)
O(4)#1-Cd(1)-O(3)#1	53.16(13)	O(3)-Cd(1)-O(3)#1	72.76(14)
N(1)-Cd(1)-O(2)	89.44(17)	N(3)-Cd(1)-O(2)	90.79(16)
O(1)-Cd(1)-O(2)	53.52(15)	O(4)#1-Cd(1)-O(2)	85.97(15)
O(3)-Cd(1)-O(2)	149.28(14)	O(3)#1-Cd(1)-O(2)	137.96(14)
Complex 3			
Cd(1)-O(2)#1	2.270(4)	Cd(1)-O(2)	2.270(4)
Cd(1)-O(5)#1	2.290(4)	Cd(1)-O(5)	2.290(4)
Cd(1)-O(4)	2.330(4)	Cd(1)-O(4)#1	2.330(4)
Cd(2)-O(3)	2.202(4)	Cd(2)-O(1)	2.205(4)
Cd(2)-O(6)	2.298(4)	Cd(2)-N(2)	2.307(5)
Cd(2)-N(1)	2.373(5)	Cd(2)-O(5)#1	2.489(4)
O(2)#1-Cd(1)-O(2)	180.0(2)	O(2)#1-Cd(1)-O(5)#1	90.24(15)
O(2)-Cd(1)-O(5)#1	89.76(15)	O(2)#1-Cd(1)-O(5)	89.76(15)
O(2)-Cd(1)-O(5)	90.24(15)	O(5)#1-Cd(1)-O(5)	180.0
O(2)#1-Cd(1)-O(4)	84.29(16)	O(2)-Cd(1)-O(4)	95.71(16)
O(5)#1-Cd(1)-O(4)	86.52(15)	O(5)-Cd(1)-O(4)	93.48(15)
O(2)#1-Cd(1)-O(4)#1	95.71(16)	O(2)-Cd(1)-O(4)#1	84.29(16)
O(5)#1-Cd(1)-O(4)#1	93.48(15)	O(5)-Cd(1)-O(4)#1	86.52(15)
O(4)-Cd(1)-O(4)#1	180.00(13)	O(3)-Cd(2)-O(1)	87.48(16)

O(3)-Cd(2)-O(6)	95.37(16)	O(1)-Cd(2)-O(6)	153.00(17)
O(3)-Cd(2)-N(2)	95.09(17)	O(1)-Cd(2)-N(2)	105.94(18)
O(6)-Cd(2)-N(2)	100.55(17)	O(3)-Cd(2)-N(1)	163.49(18)
O(1)-Cd(2)-N(1)	87.92(18)	O(6)-Cd(2)-N(1)	95.92(18)
N(2)-Cd(2)-N(1)	71.01(18)	O(3)-Cd(2)-O(5)#1	114.35(15)
O(1)-Cd(2)-O(5)#1	99.43(15)	O(6)-Cd(2)-O(5)#1	55.02(14)
N(2)-Cd(2)-O(5)#1	141.80(15)	N(1)-Cd(2)-O(5)#1	82.05(16)

Complex 4

Mn(1)-O(4)#1	2.175(2)	Mn(1)-O(4)	2.175(2)
Mn(1)-O(1)	2.198(2)	Mn(1)-O(1)#1	2.198(2)
Mn(1)-O(5)	2.202(2)	Mn(1)-O(5)#1	2.202(2)
Mn(2)-O(6)	2.073(2)	Mn(2)-O(3)	2.074(2)
Mn(2)-O(2)	2.200(2)	Mn(2)-N(1)	2.226(3)
Mn(2)-N(2)	2.293(3)	Mn(2)-O(1)	2.352(2)
O(4)#1-Mn(1)-O(4)	180.0	O(4)#1-Mn(1)-O(1)	87.30(9)
O(4)-Mn(1)-O(1)	92.70(9)	O(4)#1-Mn(1)-O(1)#1	92.70(9)
O(4)-Mn(1)-O(1)#1	87.30(9)	O(1)-Mn(1)-O(1)#1	180.0
O(4)#1-Mn(1)-O(5)	86.06(9)	O(4)-Mn(1)-O(5)	93.94(9)
O(1)-Mn(1)-O(5)	90.44(8)	O(1)#1-Mn(1)-O(5)	89.56(8)
O(4)#1-Mn(1)-O(5)#1	93.94(9)	O(4)-Mn(1)-O(5)#1	86.06(9)
O(1)-Mn(1)-O(5)#1	89.56(8)	O(1)#1-Mn(1)-O(5)#1	90.44(8)
O(5)-Mn(1)-O(5)#1	180.00(3)	O(6)-Mn(2)-O(3)	89.45(10)
O(6)-Mn(2)-O(2)	157.22(9)	O(3)-Mn(2)-O(2)	93.52(10)
O(6)-Mn(2)-N(1)	106.02(10)	O(3)-Mn(2)-N(1)	96.98(10)
O(2)-Mn(2)-N(1)	96.03(10)	O(6)-Mn(2)-N(2)	88.12(11)
O(3)-Mn(2)-N(2)	168.77(10)	O(2)-Mn(2)-N(2)	92.96(10)
N(1)-Mn(2)-N(2)	73.20(10)	O(6)-Mn(2)-O(1)	100.10(9)
O(3)-Mn(2)-O(1)	107.64(9)	O(2)-Mn(2)-O(1)	57.52(8)
N(1)-Mn(2)-O(1)	144.06(9)	N(2)-Mn(2)-O(1)	83.58(9)
Mn(1)-O(1)-Mn(2)	102.68(9)		

Complex 5

Mn(1)-O(4)	2.107(3)	Mn(1)-O(5)	2.109(3)
Mn(1)-O(1)	2.146(3)	Mn(1)-O(8)	2.200(3)
Mn(1)-O(10)	2.267(3)	Mn(1)-O(7)	2.374(3)
Mn(2)-O(3)	2.091(3)	Mn(2)-O(9)	2.131(3)
Mn(2)-O(2)	2.138(3)	Mn(2)-O(6)	2.186(3)
Mn(2)-O(7)#1	2.241(3)	Mn(2)-O(10)	2.328(3)
O(4)-Mn(1)-O(5)	94.13(13)	O(4)-Mn(1)-O(1)	175.82(13)
O(5)-Mn(1)-O(1)	90.05(13)	O(4)-Mn(1)-O(8)	83.40(12)
O(5)-Mn(1)-O(8)	165.05(12)	O(1)-Mn(1)-O(8)	92.58(13)
O(4)-Mn(1)-O(10)	93.45(12)	O(5)-Mn(1)-O(10)	94.87(11)
O(1)-Mn(1)-O(10)	86.11(12)	O(8)-Mn(1)-O(10)	99.99(12)
O(4)-Mn(1)-O(7)	88.49(12)	O(5)-Mn(1)-O(7)	108.12(11)

O(1)-Mn(1)-O(7)	90.28(12)	O(8)-Mn(1)-O(7)	57.17(11)
O(10)-Mn(1)-O(7)	156.73(11)	O(3)-Mn(2)-O(9)	85.31(13)
O(3)-Mn(2)-O(2)	175.10(13)	O(9)-Mn(2)-O(2)	89.84(12)
O(3)-Mn(2)-O(6)	97.80(13)	O(9)-Mn(2)-O(6)	95.92(13)
O(2)-Mn(2)-O(6)	83.41(11)	O(3)-Mn(2)-O(7)#1	94.77(13)
O(9)-Mn(2)-O(7)#1	89.75(13)	O(2)-Mn(2)-O(7)#1	84.46(11)
O(6)-Mn(2)-O(7)#1	166.59(12)	O(3)-Mn(2)-O(10)	97.40(12)
O(9)-Mn(2)-O(10)	176.85(12)	O(2)-Mn(2)-O(10)	87.41(11)
O(6)-Mn(2)-O(10)	85.30(12)	O(7)#1-Mn(2)-O(10)	88.44(11)
Mn(1)-O(10)-Mn(2)	104.95(12)	Mn(2)#2-O(7)-Mn(1)	109.13(12)

^ASymmetry codes: complex **2**: #1 -x+1,-y+1,-z+1; complex **3**: #1 -x,-y,-z+1; complex **4**: #1 -x+1,-y,-z+2; complex **5**: #1 x,y+1,z; #2 x,y-1,z.