

Electronic Supplementary Information (ESI) for

**Structural Diversities and Related Properties of Four Coordination Polymers
Synthesized From Original Ligand of 3,3',5,5'-Azobenzene tetracarboxylic Acid**

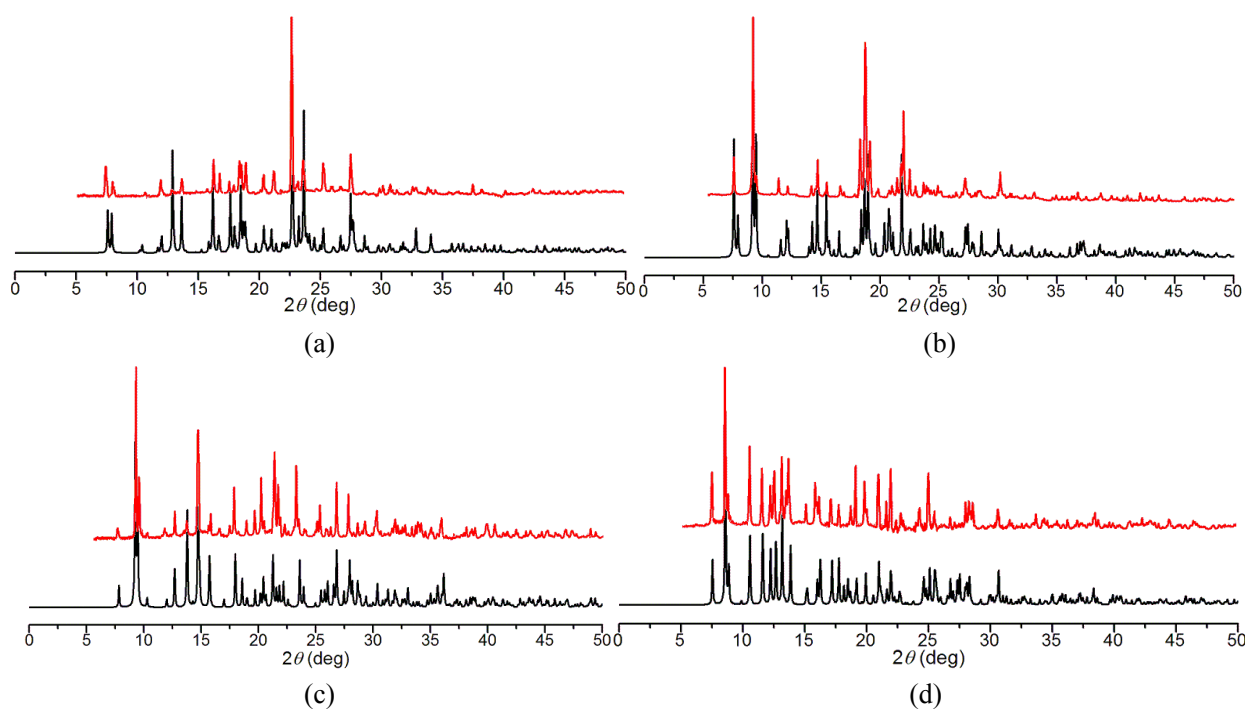
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Figure S1. PXRD patterns of **1** (a), **2** (b), **3** (c), and **4** (d). Dark: calculated from the X-ray single-crystal data; Red: observed for the as-synthesized solids.

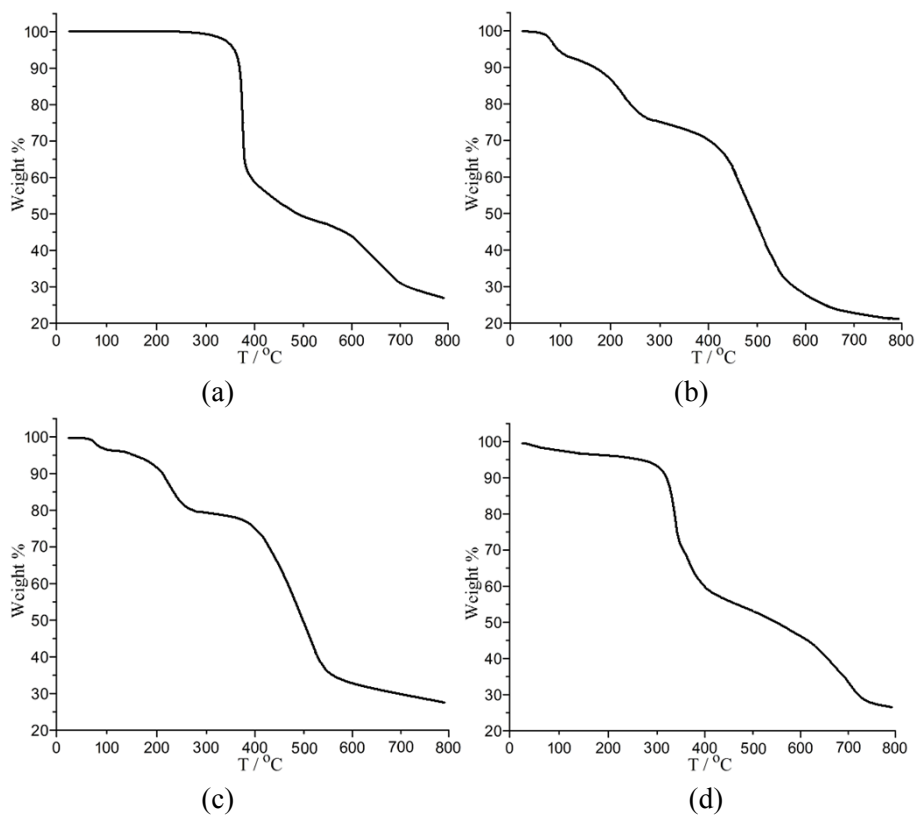


Figure S2. TG curves of **1** (a), **2** (b), **3** (c), and **4** (d).

Table S1 Selected bond lengths (Å) and angles (°) for **1 – 4**.

Complex 1							
Co(1)-O(9) ^{#1}	1.942(3)	Co(1)-O(1)	1.993(3)	Co(1)-N(6) ^{#2}	2.004(3)	Co(1)-N(3)	2.035(4)
O(9) ^{#1} -Co(1)-O(1)	104.33(13)	O(9) ^{#1} -Co(1)-N(6) ^{#2}	113.91(13)	O(9) ^{#1} -Co(1)-N(3)	114.92(13)	O(1)-Co(1)-N(3)	94.66(13)
N(6) ^{#2} -Co(1)-N(3)	108.07(14)	O(1)-Co(1)-N(6) ^{#2}	119.76(13)				
Symmetry codes: #1 -x+1, y-1/2, -z+1/2; #2 x+1, y, z+1.							
Complex 2							
Mn(1)-O(12) ^{#2}	2.127(3)	Mn(1)-O(2W)	2.147(3)	Mn(1)-O(7) ^{#3}	2.206(3)	Mn(2)-O(7) ^{#3}	2.228(3)
Mn(1)-O(1W)	2.132(4)	Mn(1)-O(3)	2.179(3)	Mn(2)-O(11) ^{#2}	2.126(3)	Mn(2)-O(2)	2.147(3)
N(2)-O(4)	1.369(10)	N(2)-O(8)	1.429(17)	O(12) ^{#2} -Mn(1)-O(1W)	169.22(17)	O(12) ^{#2} -Mn(1)-O(2W)	85.79(14)
O(1W)-Mn(1)-O(2W)	87.50(16)	O(2W)-Mn(1)-O(7) ^{#3}	142.88(13)	O(11) ^{#2} -Mn(2)-O(2) ^{#5}	87.06(15)	O(2) ^{#5} -Mn(2)-O(7) ^{#6}	79.13(13)
O(12) ^{#2} -Mn(1)-O(3)	95.11(15)	O(3)-Mn(1)-O(7) ^{#3}	121.49(13)	O(11) ^{#4} -Mn(2)-O(2) ^{#5}	92.94(15)	O(11) ^{#2} -Mn(2)-O(7) ^{#3}	89.02(13)
O(1W)-Mn(1)-O(3)	93.94(19)	O(11) ^{#2} -Mn(2)-O(11) ^{#4}	180.000(1)	O(2)-Mn(2)-O(2) ^{#5}	180.000(1)	O(11) ^{#4} -Mn(2)-O(7) ^{#3}	90.98(13)
O(2W)-Mn(1)-O(3)	95.62(15)	O(11) ^{#2} -Mn(2)-O(2)	92.94(15)	O(11) ^{#2} -Mn(2)-O(7) ^{#6}	90.98(13)	O(2)-Mn(2)-O(7) ^{#3}	79.13(13)
O(12) ^{#2} -Mn(1)-O(7) ^{#3}	91.37(13)	O(11) ^{#4} -Mn(2)-O(2)	87.06(15)	O(11) ^{#4} -Mn(2)-O(7) ^{#6}	89.02(13)	O(2) ^{#5} -Mn(2)-O(7) ^{#3}	100.87(13)
O(1W)-Mn(1)-O(7) ^{#3}	88.90(16)	O(2)-Mn(2)-O(7) ^{#6}	100.87(13)	O(7) ^{#6} -Mn(2)-O(7) ^{#3}	180.000(1)		
Symmetry codes: #2 x-1, y+1, z; #3 x-1, y, z; #4 -x+1, -y+1, -z+2; #5 -x, -y+2, -z+2; #6 -x+1, -y+2, -z+2; #7 x+1, y, z; #8 x+1, y-1, z.							
Complex 3							
Cd(1)-O(7) ^{#1}	2.230(3)	Cd(1)-O(4) ^{#3}	2.263(3)	Cd(2)-O(3) ^{#7}	2.247(3)	Cd(2)-O(6)	2.306(3)
Cd(1)-O(1)	2.332(3)	Cd(2)-O(8) ^{#6}	2.199(3)	Cd(2)-O(1) ^{#8}	2.248(3)	Cd(2)-O(5)	2.395(3)
N(1)-O(9)	1.295(11)	N(2)-O(10)	1.250(11)	O(7) ^{#1} -Cd(1)-O(7) ^{#2}	180.000(1)	O(7) ^{#1} -Cd(1)-O(4) ^{#3}	86.27(13)
O(7) ^{#2} -Cd(1)-O(4) ^{#3}	93.73(13)	O(4) ^{#3} -Cd(1)-O(1)	85.17(12)	O(1)-Cd(1)-O(1) ^{#5}	180.000(1)	O(1) ^{#8} -Cd(2)-O(6)	137.69(12)
O(7) ^{#1} -Cd(1)-O(4) ^{#4}	93.73(13)	O(4) ^{#4} -Cd(1)-O(1)	94.83(12)	O(8) ^{#6} -Cd(2)-O(3) ^{#7}	98.42(14)	O(8) ^{#6} -Cd(2)-O(5)	152.69(12)
O(7) ^{#2} -Cd(1)-O(4) ^{#4}	86.27(13)	O(7) ^{#1} -Cd(1)-O(1) ^{#5}	89.62(11)	O(8) ^{#6} -Cd(2)-O(1) ^{#8}	101.44(12)	O(3) ^{#7} -Cd(2)-O(5)	91.33(14)
O(4) ^{#3} -Cd(1)-O(4) ^{#4}	180.000(1)	O(7) ^{#2} -Cd(1)-O(1) ^{#5}	90.38(11)	O(3) ^{#7} -Cd(2)-O(1) ^{#8}	114.23(11)	O(1) ^{#8} -Cd(2)-O(5)	97.59(12)
O(7) ^{#1} -Cd(1)-O(1)	90.38(11)	O(4) ^{#3} -Cd(1)-O(1) ^{#5}	94.83(12)	O(8) ^{#6} -Cd(2)-O(6)	97.99(12)	O(6)-Cd(2)-O(5)	55.09(12)
O(7) ^{#2} -Cd(1)-O(1)	89.62(11)	O(4) ^{#4} -Cd(1)-O(1) ^{#5}	85.17(12)	O(3) ^{#7} -Cd(2)-O(6)	99.43(13)		
Symmetry codes: #1 -x+1, -y+1, -z; #2 x, y, z+1; #3 x-1, y, z; #4 -x+2, -y+1, -z+1; #5 -x+1, -y+1, -z+1; #6 x, y-1, z; #7 x-1, y-1, z-1; #8 x, y-1, z-1.							
Complex 4							
Cd(1)-N(5) ^{#1}	2.192(5)	Cd(1)-O(2)	2.233(4)	Cd(1)-O(2) ^{#3}	2.576(5)	O(5)-N(9)	1.194(9)
Cd(1)-O(7) ^{#2}	2.197(5)	Cd(1)-N(6)	2.297(5)	Cd(1)-O(3)	2.631(4)	O(4)-N(9)	1.195(9)
N(5) ^{#1} -Cd(1)-O(7) ^{#2}	128.20(18)	O(7) ^{#2} -Cd(1)-N(6)	90.07(18)	O(2)-Cd(1)-O(2) ^{#3}	76.59(17)	O(2)-Cd(1)-O(3)	53.24(15)
N(5) ^{#1} -Cd(1)-O(2)	127.72(17)	O(2)-Cd(1)-N(6)	104.25(17)	N(6)-Cd(1)-O(2) ^{#3}	173.25(16)	N(6)-Cd(1)-O(3)	84.51(17)
O(7) ^{#2} -Cd(1)-O(2)	99.40(17)	N(5) ^{#1} -Cd(1)-O(2) ^{#3}	87.73(17)	N(5) ^{#1} -Cd(1)-O(3)	82.66(16)	O(2) ^{#3} -Cd(1)-O(3)	101.08(14)
N(5) ^{#1} -Cd(1)-N(6)	96.80(19)	O(7) ^{#2} -Cd(1)-O(2) ^{#3}	83.19(16)	O(7) ^{#2} -Cd(1)-O(3)	149.13(17)		
Symmetry codes: #1 -x+1, y-1, -z+1/2; #2 x+1/2, y+1/2, z; #3 -x+1, -y, -z+1.							