Supporting Information

A Series of Ag(I)-Cd(II) Hetero- and Ag(I) Homo-nuclear Coordination Polymers Based on 5-Iodo-Isophthalic Acid and N-Donor Ancillary Ligands

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Table S1. Crystal data and structure refinement parameters for complexes **1**−**5**.

Compound No.	**1**	**2**	**3**	**4**	**5**
formula	$C_{36}H_{28}N_4O_{11}I_2CdAg_2$	$C_{40}H_{24}N_4O_9I_2CdAg_2$	$C_{14}H_{10}NO_4IAg_2$	$C_{20}H_{15}N_2O_4IAg_2$	$C_{44}H_{34}N_8O_8I_2Ag_4$
fw	1274.58	1286.58	598.87	689.98	1488.07
crystal system	Monoclinic	Monoclinic	Monoclinic	Triclinic	Triclinic
space group	$P2_1/c$	$P2_1/c$	$C2/c$	$P\bar{1}$	$P\bar{1}$
a (Å)	14.0054(3)	15.7940(5)	26.0990(17)	9.2367(9)	11.2576(4)
b (Å)	15.1789(3)	13.4071(6)	8.7015(3)	9.3456(8)	12.6293(4)
c (Å)	18.5649(3)	17.8147(8)	15.0839(9)	13.4445(11)	16.9504(3)
α (°)	90.00	90.00	90.00	88.897(7)	102.542(3)
β (°)	94.108(2)	93.021(3)	116.468(8)	71.282(8)	93.087(3)
γ (°)	90.00	90.00	90.00	67.893(8)	106.942(3)
V (Å^3)	3936.51(13)	3767.1(3)	3066.5(4)	1011.53(16)	2232.56(14)
Z	4	4	8	2	2
Dc (g·cm^{-3})	2.151	2.269	2.594	2.265	2.214
F(000)	2432	2448	2240	656	1424
reflns collected	15670	14285	6301	7642	14176
Independent reflns	6923	6616	2697	3565	7839
R(int)	0.0297	0.0358	0.0285	0.0338	0.0270
GOF on F^2	1.077	1.091	1.064	1.001	1.074
$R_1{}^a$ ($I>2\sigma(I)$)	0.0396	0.0760	0.0387	0.0332	0.0492
$wR_2{}^b$ ($I>2\sigma(I)$)	0.0727	0.1563	0.1240	0.0665	0.1126

$^aR_1 = \sum||F_o|-|F_c||/\sum|F_o|$. $^bwR_2 = [\sum w(F_o{}^2 - F_c{}^2)^2/\sum w(F_o{}^2)^2]^{1/2}$

Table S2. Selected Bond Distances and Angles for Compounds **1**−**5.**

Compound **1**^{a}

Ag(1)−N(3)	2.175(4)	Ag(1)−N(1)	2.160(4)
Ag(2)−N(2)#3	2.172(4)	Ag(2)−N(4)	2.171(4)
Ag(2)−O(1W)	2.555(5)	Cd(1)−O(8)#2	2.325(4)
Cd(1)−O(4)#1	2.247(4)	Cd(1)−O(6)	2.295(3)
Cd(1)−O(1)	2.209(4)	N(3)−Ag(1)−N(1)	159.48(18)
N(2)#3−Ag(2)−N(4)	162.09(19)	N(4)−Ag(2)−O(1W)	104.20(18)
N(2)#3−Ag(2)−O(1W)	92.92(18)	O(1)-Cd(1)−O(4)#1	114.18(15)
O(8)#2−Cd(1)−O(4)#1	121.14(14)	O(8)#2−Cd(1)−O(1)	93.58(14)
O(6)−Cd(1)−O(1)	121.93(13)	O(8)#2−Cd(1)−O(6)	117.49(13)

O(4)#1−Cd(1)−O(6)	91.07(14)		
Compound **2**[b]			
Ag(1)−N(1)	2.422(9)	Ag(1)−N(2)	2.252(9)
Ag(1)−O(4)	2.275(7)	Ag(2)−N(3)	2.286(10)
Ag(2)−N(4)	2.373(9)	Ag(2)−O(1)	2.526(8)
Cd(1)−O(3)#4	2.247(7)	Cd(1)−O(7)#5	2.259(6)
Cd(1)−O(5)	2.291(7)	Cd(1)−O(1)	2.355(7)
Cd(1)−O(2)	2.472(7)	Cd(1)−O(6)	2.581(7)
N(2)−Ag(1)−O(4)	169.3(3)	N(2)−Ag(1)−N(1)	71.2(3)
O(4) −Ag(1)−N(1)	111.2(3)	O(3)#4−Cd(1)−O(7)#5	103.1(2)
O(3)#4−Cd(1)−O(5)	109.6(3)	O(7)#5−Cd(1)−O(5)	123.9(2)
O(3)#4−Cd(1)−O(1)	118.3(2)	O(7)#5−Cd(1)−O(1)	120.8(3)
O(5)−Cd(1)−O(1)	80.8(2)	O(3)#2−Cd(1)−O(2)	85.7(3)
O(7)#1−Cd(1)−O(2)	92.7(2)	O(5)−Cd(1)−O(2)	133.1(2)
O(1)−Cd(1)−O(2)	53.8(2)	O(3)#4−Cd(1)−O(6)	89.1(2)
O(7)#5−Cd(1)−O(6)	83.7(2)	O(5)−Cd(1)−O(6)	53.5(2)
O(1)−Cd(1)−O(6)	133.3(2)	O(2)−Cd(1)−O(6)	172.8(2)
N(3)−Ag(2)−N(4)	72.1(3)	N(3)−Ag(2)−O(1)	96.6(3)
N(4)−Ag(2)−O(1)	92.6(3)		
Compound **3**[c]			
Ag(1)−N(1)	2.141(6)	Ag(1)−O(1)	2.227(5)
Ag(2)−O(4)#1	2.204(5)	Ag(2)−O(3)	2.207(4)
Ag(2)−O(2)#2	2.468(5)	N(1)−Ag(1)−O(1)	144.2(2)
O(4)#1−Ag(2)−O(3)	159.4(2)	O(4)#1−Ag(2)−O(2)#2	104.31(19)
O(3)−Ag(2)−O(2)#2	91.69(18)		
Compound **4**[d]			
Ag(1)−O(2)#1	2.194(3)	Ag(1)−O(1)	2.241(3)
Ag(1)−O(4)#2	2.486(3)	Ag(2)−N(2)	2.179(4)
Ag(2)−N(1)	2.197(4)	O(2)#1−Ag(1)−O(1)	158.62(13)
O(2)#1−Ag(1)−O(4)#2	99.81(12)	O(1)−Ag(1)−O(4)#2	96.43(12)
N(2)−Ag(2)−N(1)	165.43(15)		

Compound **5**[e]			
Ag(1)−O(1)	2.305(4)	Ag(1)−O(7)	2.339(4)
Ag(1)−O(8)#4	2.404(4)	Ag(2)−O(4)	2.107(4)
Ag(2)−O(4) #5	2.113(3)	Ag(5)−N(8)#6	2.097(4)
Ag(5)−N(8)	2.097(5)	Ag(3)−N(1)	2.222(5)
Ag(3)−O(6)	2.365(4)	Ag(3)−O(3) #1	2.458(4)
Ag(3)−O(5)	2.569(4)	Ag(4)−N(5)	2.121(5)
Ag(4)−N(4)	2.124(5)	O(1)−Ag(1)−O(7)	102.97(16)
O(1)−Ag(1)−O(8)#4	129.32(14)	O(7)−Ag(1)−O(8)#4	124.42(15)
O(4)−Ag(2)−O(4)#5	180.000(2)	N(8)−Ag(5)−N(8)#3	180.00(17)
N(1)−Ag(3)−O(6)	160.04(17)	N(1)−Ag(3)−O(3)#1	103.02(16)
O(6) −Ag(3)−O(3)#1	96.41(14)	N(1)−Ag(3)−O(5)	121.49(16)
O(6) −Ag(3)−O(5)	53.09(13)	O(3)#1−Ag(3)−O(5)	90.48(14)
N(5)−Ag(4)−N(4)	174.0(2)		

Symmetry codes: [a]#1 x-1, -y+1/2, z+1/2; #2 x, y-1, z; #3 x+1, y, z. [b]#4 1-x, y+1/2, 1/2-z; #5 -x+2, y-1/2, 1/2-z. [c]#1 -x+1, -y+3, -z; #2 x, y+1, z. [d]#1 -x+2,-y,-z; #2 -x+1,-y+1,-z. [e]#1 -x, -y+1, -z+1; #2 -x-1, -y+1, -z+2; #3 -x+2, -y+2, -z-1. #4 -x, -y, -z; #5 x+1, y, z-1. #6 x-1, y-1, z.

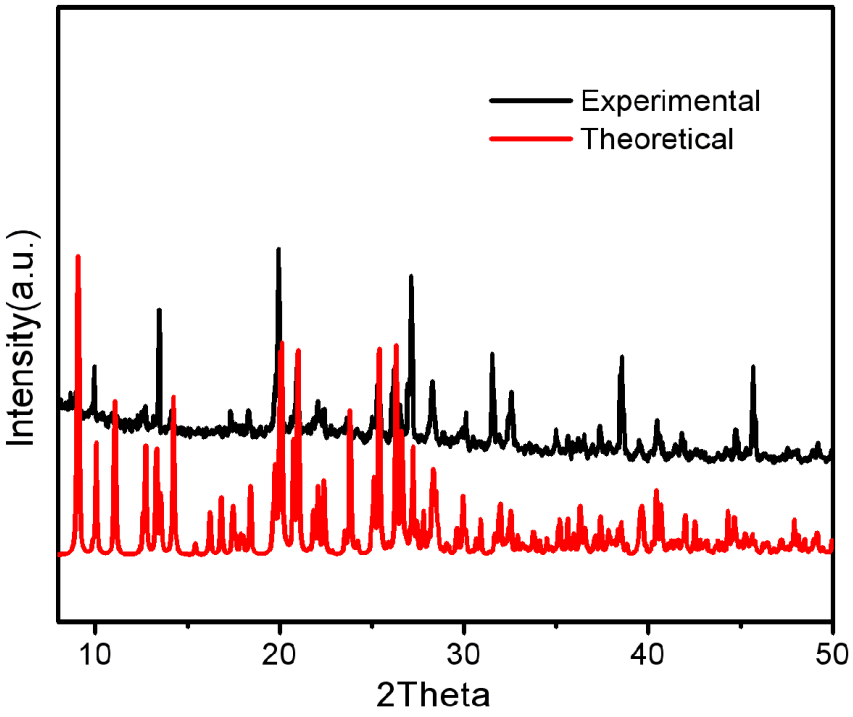

Figure S1. The theoretical and experimental PXRD pattems for **1**.

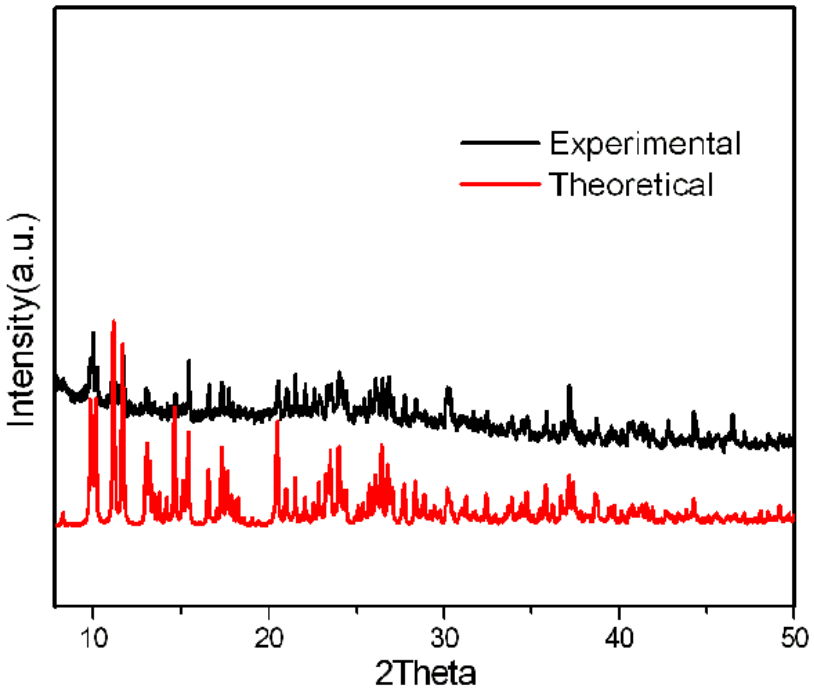

Figure S2. The theoretical and experimental PXRD pattems for **2**.

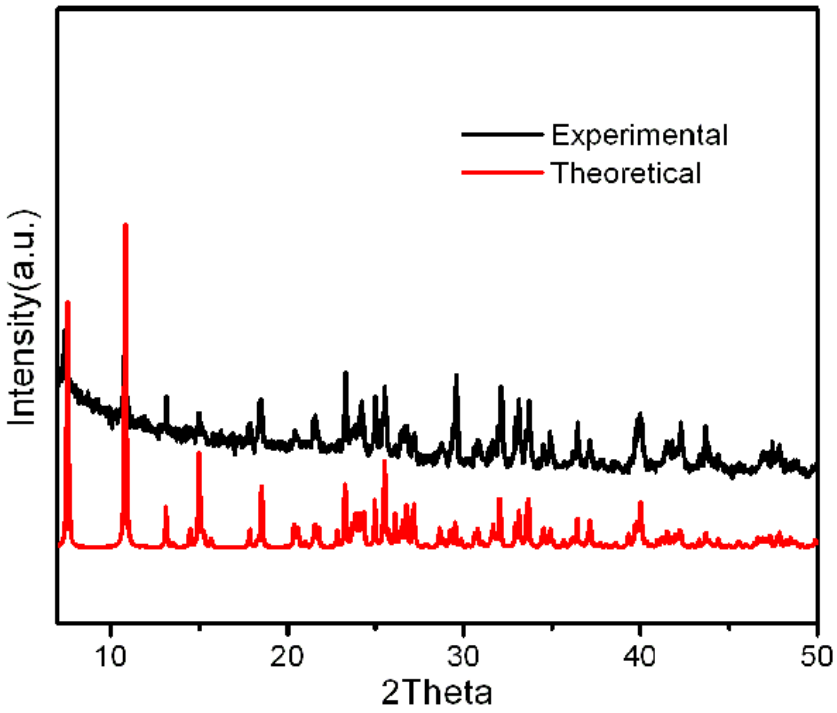

Figure S3. The theoretical and experimental PXRD pattems for **3**.

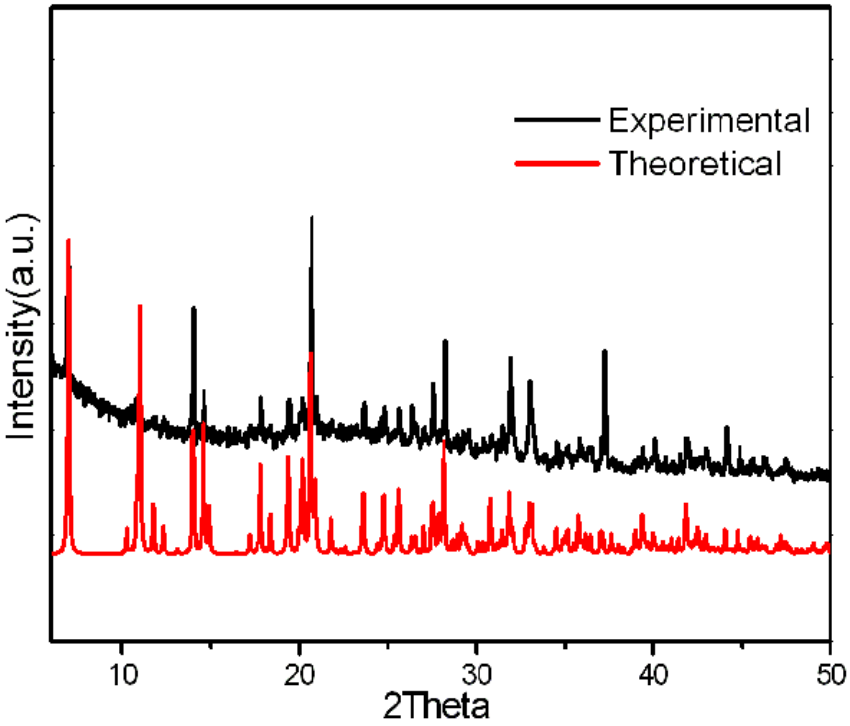

Figure S4. The theoretical and experimental PXRD pattems for **4**.

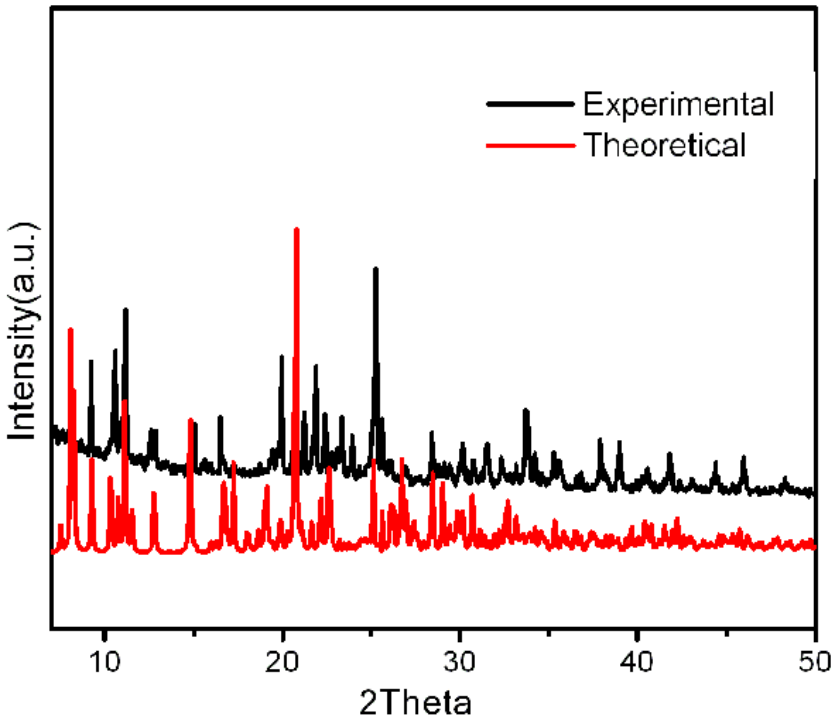

Figure S5. The theoretical and experimental PXRD pattems for **5**.

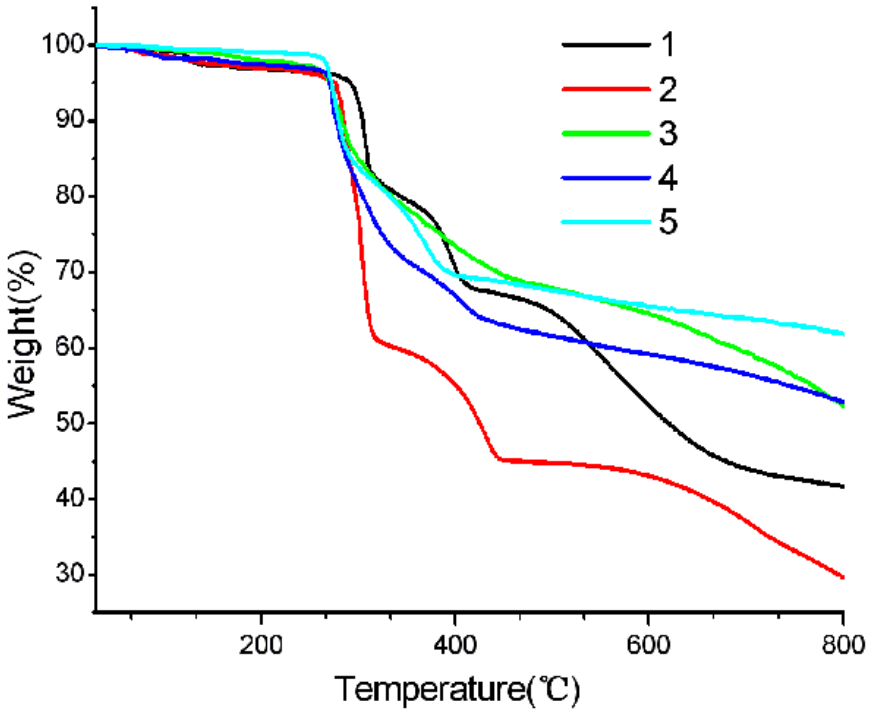

Figure S6. TG curves for compounds **1**−**5**.

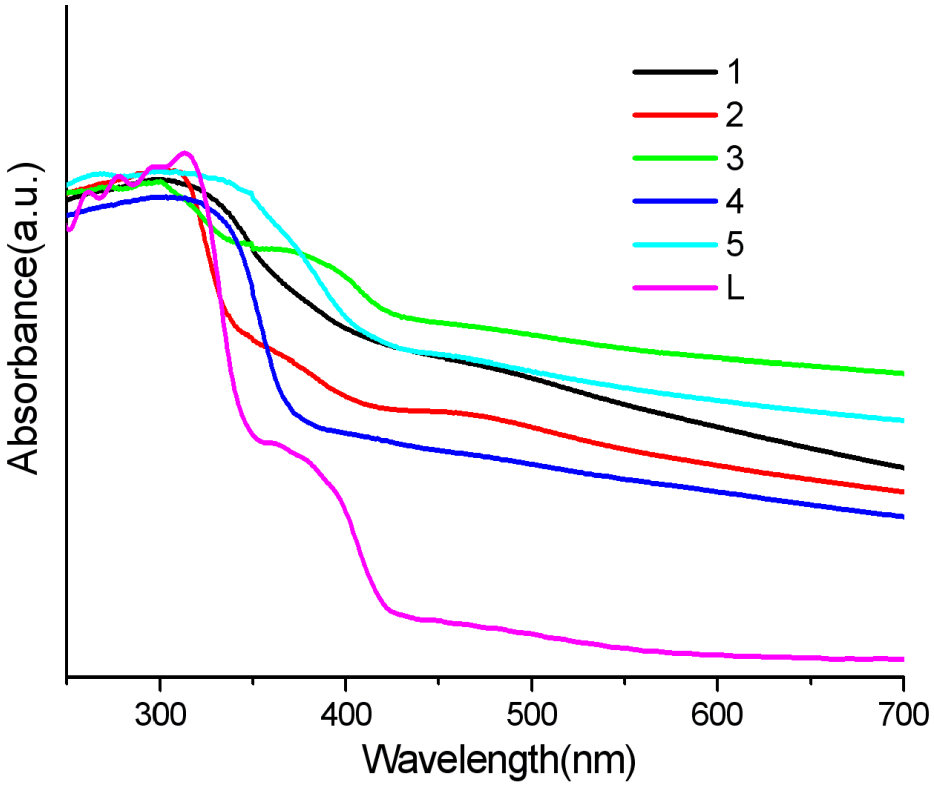

Figure S7. UV-vis absorption specture for ligand and compounds **1**−**5**.