Supporting Information

Synergistic metal and anion effects on formation of coordination assemblies from N,N'-bis(3-pyridylmethyl)naphthalene diimide ligand

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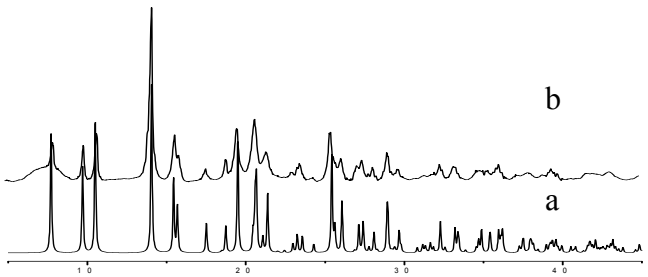

Figure **S1** X-Ray powder diffraction of complex **2:** (a) simulated, and (b) measured.

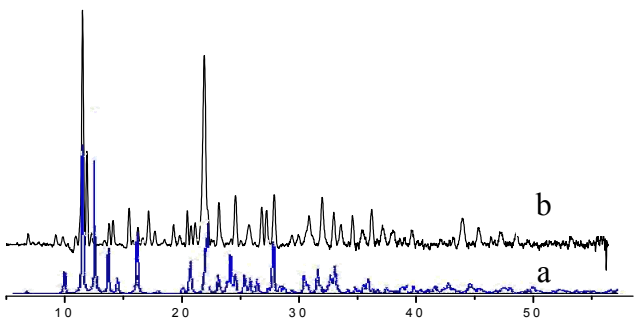

Figure **S2** X-Ray powder diffraction of complex **4**: (a) simulated, and (b) measured..

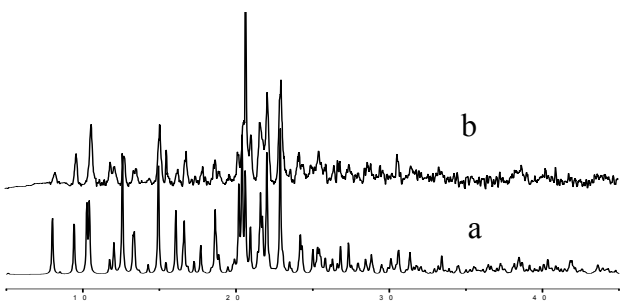

Figure **S3** X-Ray powder diffraction of complex **5:** (a) simulated, and (b) measured.

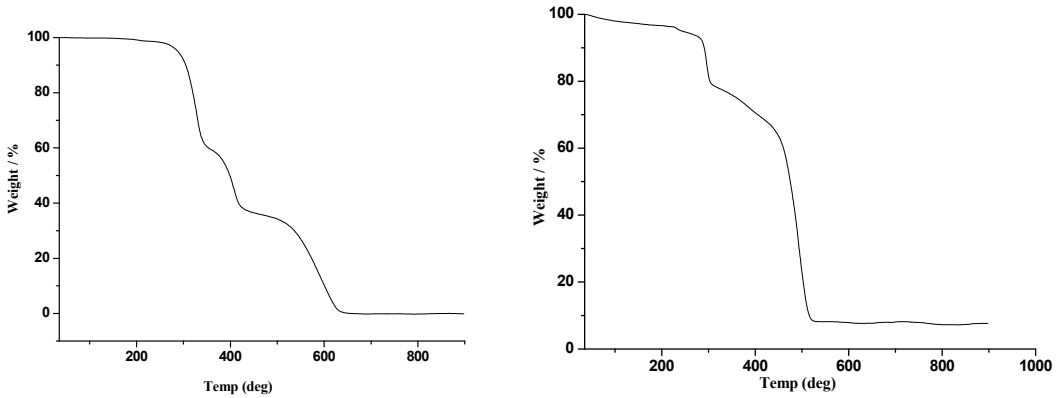

Figure **S4** TG curves of complexes **2** (left) and **5** (right).

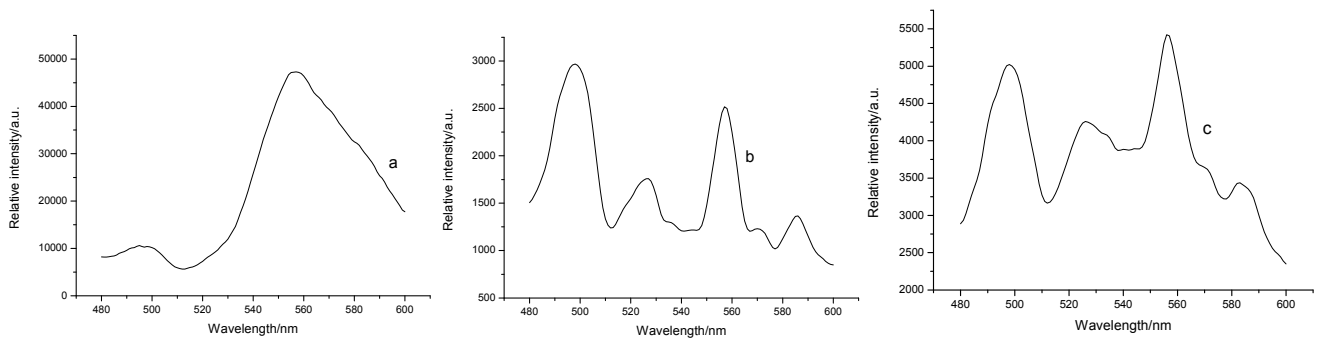

Figure **S5** Emission specta of the ligand (a), complexes **1** (b) and **4** (c) excited at 447 nm.

Table S1 Selected bond distances (Å) and angles (°) for complexes **1-5.**

Complex **1**			
Cd(1)-N(1)	2.313(7)	N(1)-Cd(1)-I(1)	105.2(2)
Cd(1)-N(4)[a]	2.309(6)	N(4)[a]-Cd(1)-I(1)	103.0(2)
Cd(1)-I(1)	2.708(1)	N(1)-Cd(1)-I(2)	99.5(2)
Cd(1)-I(2)	2.712(1)	N(4)[a]-Cd(1)-I(2)	102.1(2)
		I(1)-Cd(1)-I(2)	134.6(3)
		N(1)-Cd(1)-N(4)	112.0(2)
Complex **2**			
Hg(1)-Cl(1)	2.359(3)	Cl(1)-Hg(1)-N(1)	101.6(3)
Hg(1)-Cl(3)	2.359(3)	Cl(1)-Hg(1)-N(1)	96.3(3)
Hg(1)-N(1)	2.422(11)	Cl(1)-Hg(1)-N(1)	101.6(3)
Hg(1)-N(1)	2.422(11)	N(1)-Hg(1)-N(1)	93.4(5)
		Cl(1)-Hg(1)-Cl(1)	153.9(2)
Complex **3**			
Zn(1)-N(5)[a]	2.074(2)	N(5)[a]-Zn(1)-N(5)	180.0(1)
Zn(1)-N(5)	2.074(2)	N(1)[a]-Zn(1)-N(1)	180.0(1)
Zn(1)-N(1)[a]	2.229(2)	N(5)[a]-Zn(1)-N(1)[b]	89.5(1)
Zn(1)-N(1)	2.229(2)	N(5)[a]-Zn(1)-N(1)[c]	89.5(1)
Zn(1)-N(4)[b]	2.258(2)	N(5)[a]-Zn(1)-N(4)[c]	89.7(1)
Zn(1)-N(4)[c]	2.258(2)	N(5)[a]-Zn(1)-N(1)[c]	90.5(1)
		N(1)-Zn(1)-N(4)	93.6(1)
		N(4)-Zn(1)-N(5)	89.7(1)
		N(4)[b]-Zn(1)-N(4)[c]	180.0(1)
Complex **4**			
Cd(1)-N(1)[a]	2.395(2)	O(6)[a]-Cd(1)-O(6)	180.0(1)
Cd(1)-N(1)	2.395(2)	N(1)[a]-Cd(1)-N(3)	87.3(1)
Cd(1)-O(6)[a]	2.334(2)	N(1)-Cd(1)-N(3)	92.7(1)
Cd(1)-O(6)	2.334(2)	O(6)[a]-Cd(1)-N(1)	96.0(1)
Cd(1)-N(3)	2.308(2)	O(6)-Cd(1)-N(1)	84.0(1)
Cd(1)-N(3)[a]	2.308(2)	N(1)[a]-Cd(1)-N(3)[a]	92.7(1)
		N(1)-Cd(1)-N(3)[a]	87.3(1)
		N(1)-Cd(1)-N(1)[a]	180.0(1)
		N(3)[a]-Cd(1)-N(3)	180.0(1)
		N(3)[a]-Cd(1)-O(6)[a]	82.9(1)
		N(3)-Cd(1)-O(6)[a]	97.2(1)
Complex **5**			
Co(1)-N(1)	2.146(3)	N(1)-Co(1)-O(5)	87.0(1)
Co(1)-N(4)[a]	2.158(3)	N(4)[a]-Co(1)-O(5)	93.0(1)
Co(1)-N(5)	2.164(3)	N(5)-Co(1)-O(5)	86.0(1)
Co(1)-O(11)	2.191(3)	O(11)-Co(1)-O(5)	170.8(1)
Co(1)-O(5)	2.194(4)	N(1)-Co(1)-O(9)	142.2(1)
Co(1)-O(9)	2.197(3)	N(4)[a]-Co(1)-O(9)	91.3(1)
Co(1)-O(6)	2.287(5)	N(5)-Co(1)-O(9)	85.8(1)
		O(11)-Co(1)-O(9)	58.1(1)
		O(5)-Co(1)-O(9)	130.0(1)
		N(1)-Co(1)-O(6)	142.5(2)
		N(4)[a]-Co(1)-O(6)	81.9(2)
		N(5)-Co(1)-O(6)	93.8(1)
		O(11)-Co(1)-O(6)	132.7(1)
		O(5)-Co(1)-O(6)	56.2 (2)
		O(9)-Co(1)-O(6)	75.2(2)
		N(1)-Co(1)-N(4)[a]	94.3(1)
		N(1)-Co(1)-N(5)	90.3(1)
		N(4)[a]-Co(1)-N(5)	175.3(1)
		N(1)-Co(1)-O(11)	84.4(1)
		N(4)[a]-Co(1)-O(11)	91.1(1)
		N(5)-Co(1)-O(11)	90.6(1)

[a] Symmetry transformations used to generate equivalent atoms: 1: a, –x,-y+1,-z+1; 3: a, -x+1,-y,-z+1; b, –x,y-1/2,-z+1/2; c, x+1,-y+1/2,z+1/2; d, –x,y+1/2,-z+1/2; 4: a, -x+2,-y+1,-z+1; 5: a, -x+2,y-1/2,-z+3/2