SUPPORTING INFORMATION

Self-Assembly of Ion-Pair Complexes

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

Co(1)-O(1)	2.0404(17)	C(11)-O(4)	1.264(3)
Co(1)-O(2)	2.1154(16)	C(11)-O(5)	1.239(3)
Co(1)-O(4)	2.0771(17)	N(1)-C(8)	1.471(3)
Co(1)-O(8)	2.1344(18)	N(1)-C(10)	1.477(3)
Co(1)-O(9)	2.0851(19)	Co(2)-O(10)[a]	2.079(2)
Co(1)-N(1)	2.1401(19)	Co(2)-O(11)[a]	2.090(2)
C(9)-O(2)	1.267(3)	Co(2)-N(1S)[a]	2.145(3)
C(9)-O(3)	1.236(3)		
O(1)-Co(1)-O(4)	96.13(7)	C(9)-O(2)-Co(1)	114.31(15)
O(1)-Co(1)-O(9)	98.71(7)	C(11)-O(4)-Co(1)	114.57(16)
O(4)-Co(1)-O(9)	90.48(8)	C(8)-N(1)-Co(1)	104.03(13)
O(1)-Co(1)-O(2)	162.30(7)	C(10)-N(1)-Co(1)	107.39(14)
O(4)-Co(1)-O(2)	94.51(7)	C(7)-N(1)-Co(1)	112.24(14)
O(9)-Co(1)-O(2)	95.29(7)	O(11)-Co(2)-O(11)[a]	179.998(1)
O(1)-Co(1)-O(8)	86.85(7)	O(10)-Co(2)-O(11)[b]	88.52(10)
O(4)-Co(1)-O(8)	175.83(7)	O(10)[a]-Co(2)-O(11)[a]	91.48(10)
O(9)-Co(1)-O(8)	86.18(9)	O(10)[a]-Co(2)-N(1S)	88.67(10)
O(2)-Co(1)-O(8)	83.33(7)	O(10)-Co(2)-N(1S)	91.33(10)
O(1)-Co(1)-N(1)	91.00(7)	O(11)-Co(2)-N(1S)	88.47(10)
O(4)-Co(1)-N(1)	80.96(7)	O(11)[a]-Co(2)-N(1S)	91.53(10)
O(2)-Co(1)-N(1)	76..75(7)		

Symmetry transformations used to generate equivalent atoms: a, -x+1, -y+1, -z+1.

Table S2. Selected bond distances (Å) and bond angles (°) for **2**.

Co(1)-O(1)[a]	2.0548(18)	C(11)-O(4)	1.268(3)
Co(1)-O(1)	2.116(2)	C(11)-O(5)	1.234(3)
Co(1)-O(2)	2.1114(18)	N(1)-C(8)	1.472(3)
Co(1)-O(4)	2.0816(18)	N(1)-C(10)	1.481(3)
Co(1)-N(1)	2.157(2)	Co(2)-O(9)[b]	2.027(3)
Co(1)-O(8)	2.127(2)	Co(2)-O(10)[b]	2.080(2)
C(9)-O(2)	1.268(3)	Co(2)-O(11)[b]	2.099(3)
C(9)-O(3)	1.249(3)		
O(1)[a]-Co(1)-O(4)	107.84(7)	Co(1)[a]-O(1)-Co(1)	101.05(8)
O(1)[a]-Co(1)-O(8)	93.52(8)	C(9)-O(2)-Co(1)	115.52(16)
O(1)[a]-Co(1)-O(2)	97.03(7)	C(11)-O(4)-Co(1)	118.09(16)
O(4)-Co(1)-O(2)	154.99(7)	C(8)-N(1)-Co(1)	105.68(15)
O(8)-Co(1)-O(2)	91.05(8)	C(10)-N(1)-Co(1)	108.86(15)
O(1)[a]-Co(1)-O(1)	78.94(8)	C(7)-N(1)-Co(1)	107.18(16)
O(4)-Co(1)-O(1)	89.10(7)	O(9)-Co(2)-O(9)[b]	179.999(1)
O(2)-Co(1)-O(1)	98.45(7)	O(9)-Co(2)-O(10)[b]	91.69(9)
O(1)[a]-Co(1)-N(1)	168.61(8)	O(9)[b]-Co(2)-O(10)[b]	88.31(9)
O(4)-Co(1)-N(1)	78.96(7)	O(9)-Co(2)-O(11)[b]	90.15(18)
O(2)-Co(1)-N(1)	76.95(7)	O(9)[b]-Co(2)-O(11)[b]	89.85(18)
O(1)-Co(1)-N(1)	92.25(8)	O(10)[b]-Co(2)-O(11)[b]	91.93(11)
C(1)-O(1)-Co(1)[a]	131.04(2)	O(10)-Co(2)-O(11)[b]	88.07(11)
C(1)-O(1)-Co(1)	117.81(16)		

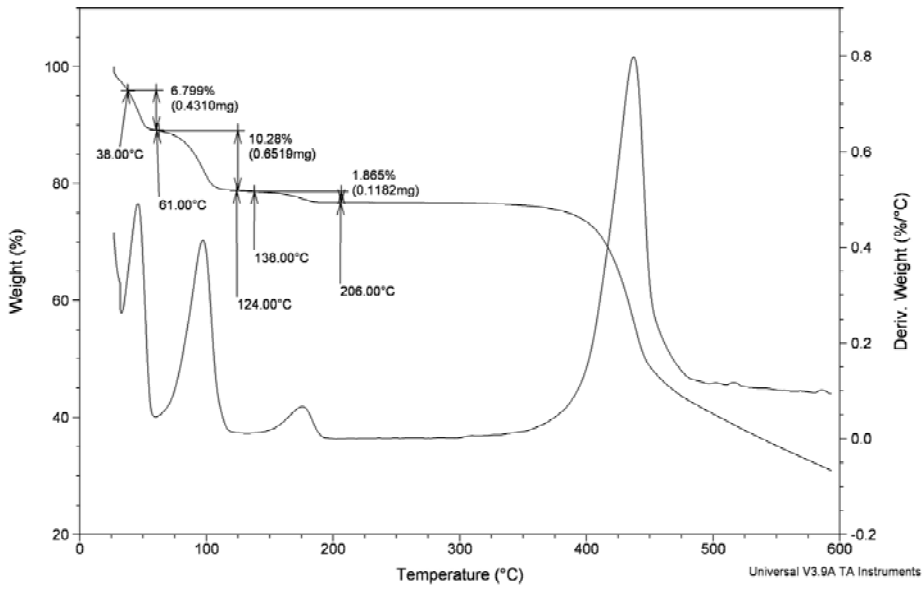
Symmetry transformations used to generate equivalent atoms: a, -x+1, -y+1, -z+1. b, -x+1, -y, -z+1.

Table S3. Selected bond distances (Å) and bond angles (°) for **3**.

Co(1)-O(1)[a]	2.099(2)	C(11)-O(4)	1.260(4)
Co(1)-O(1)	2.072(2)	C(11)-O(5)	1.240(4)
Co(1)-O(2)	2.076(2)	N(1)-C(8)	1.470(5)
Co(1)-O(4)	2.069(2)	N(1)-C(10)	1.481(5)
Co(1)-N(1)	2.126(3)	Co(2)-O(5)[b]	2.122(3)
Co(1)-O(8)	2.141(3)	Co(2)-O(9)[b]	2.077(3)
C(9)-O(2)	1.273(4)	Co(2)-O(10)[b]	2.078(4)
C(9)-O(3)	1.229(5)		
O(4)-Co(1)-O(1)	168.23(10)	Co(1)-O(1)-Co(1)[a]	92.42(9)
O(4)-Co(1)-O(2)	98.71(10)	C(9)-O(2)-Co(1)	116.3(2)
O(1)-Co(1)-O(2)	87.84(10)	C(11)-O(4)-Co(1)	115.6(2)
O(4)-Co(1)-O(1)[a]	102.01(9)	C(8)-N(1)-Co(1)	107.7(2)
O(1)-Co(1)-O(1)[a]	87.58(9)	O(9)-Co(2)-O(9)[b]	180.000(1)
O(2)-Co(1)-O(1)[a]	90.85(9)	O(9)-Co(2)-O(10)[b]	89.22(16)
O(1)-Co(1)-N(1)	93.15(10)	O(9)[b]-Co(2)-O(10)[b]	90.78(16)
O(4)-Co(1)-N(1)	78.34(10)	O(10)-Co(2)-O(10)[b]	180.0
O(2)-Co(1)-N(1)	81.03(10)	O(9)-Co(2)-O(5)[b]	94.82(14)
O(1)[a]-Co(1)-N(1)	171.81(10)	O(9)[b]-Co(2)-O(5)[b]	85.18(14)
C(1)-O(1)-Co(1)[a]	130.6(2)	O(10)-Co(2)-O(5)[b]	86.27(14)
C(1)-O(1)-Co(1)	120.5(2)	O(10)[b]-Co(2)-O(5)[b]	93.73(14)
C(10)-N(1)-Co(1)	104.7(2)	O(5)[b]-Co(2)-O(5)	180.00(11)
C(7)-N(1)-Co(1)	109.2(2)		

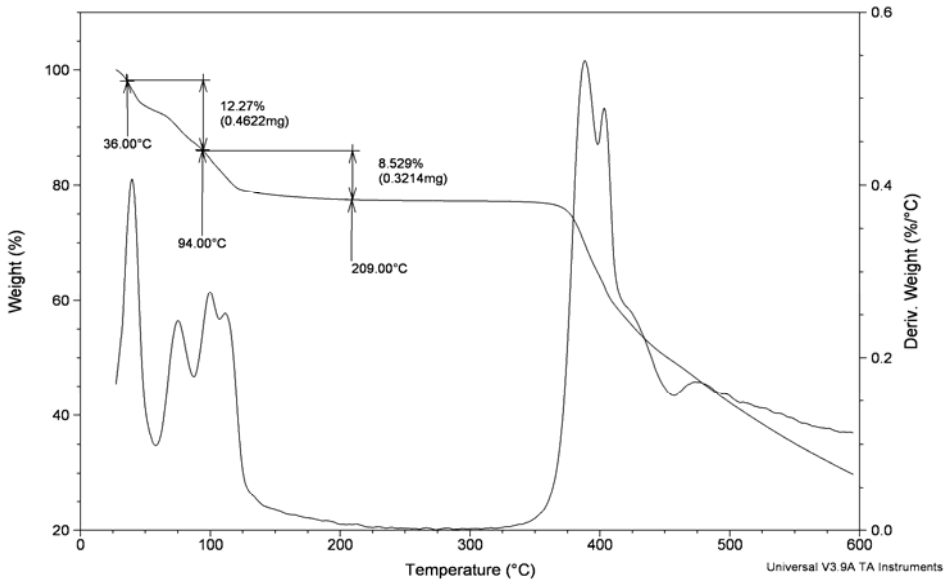
Symmetry transformations used to generate equivalent atoms: a, -x+1, -y+1, -z+1. b, -x+1, -y+1, -z.

Figure S1. TGA-DTA curve for **1.**



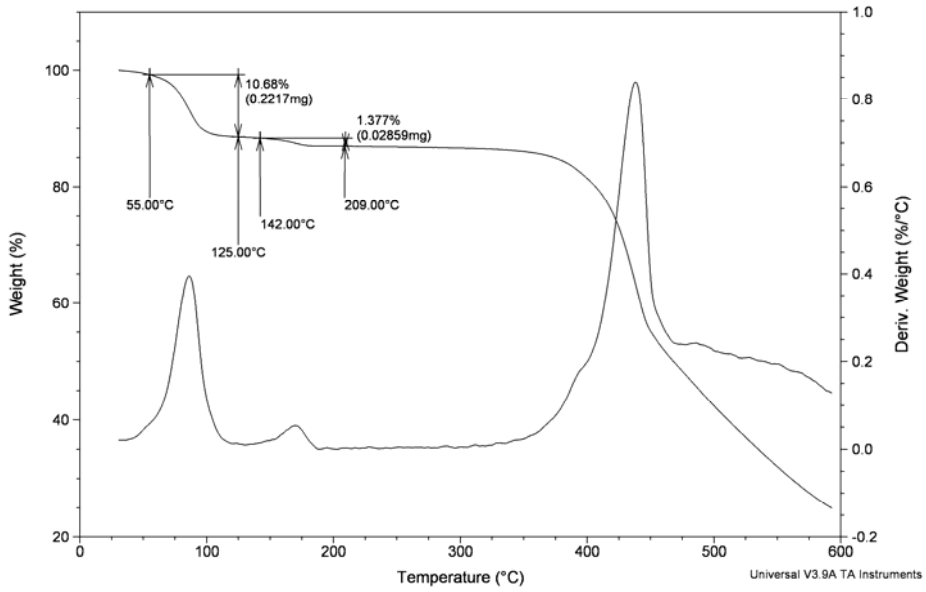
TGA-DTA curve shows the weight loss of one acetonitrile and eight aqua ligands upon heating. One acetonitrile solvent molecule is lost when the characterization were done.

Figure S2. TGA-DTA curve for **2.**



TGA-DTA curve shows that all solvent molecules (two acetonitrile and six water molecules) are retained in the sample.

Figure S3. TGA-DTA curve for **3.**



TGA-DTA curve shows that **3** retained six water molecules after vacuum dried. It is expected the all uncoordinated lattice water are lost during dehydration.

Figure S4. UV-absorption spectra for **1**.

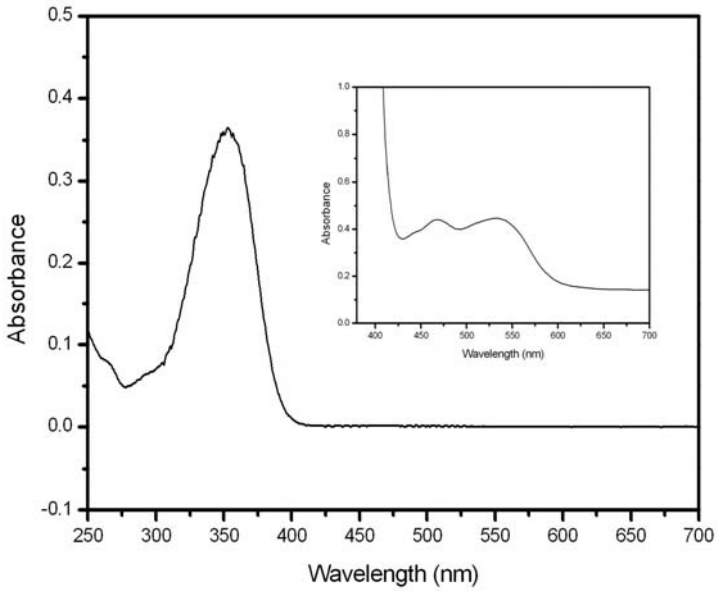


Figure S5. UV-absorption spectra for **2**.

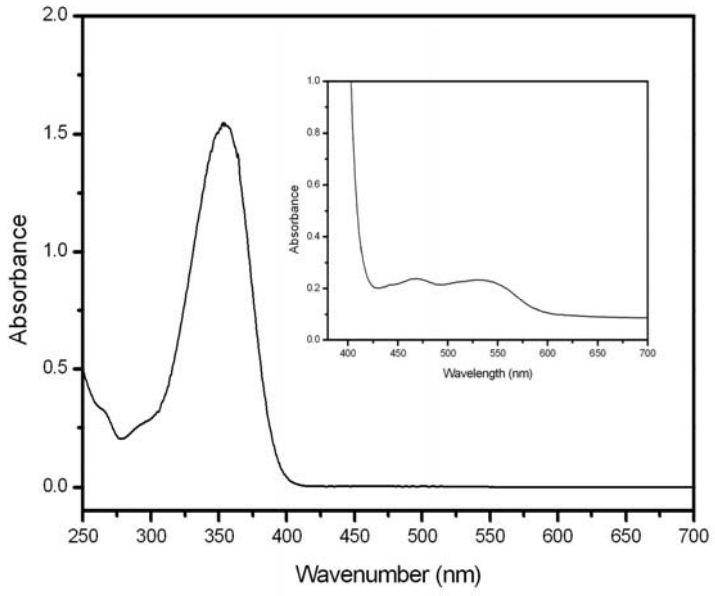
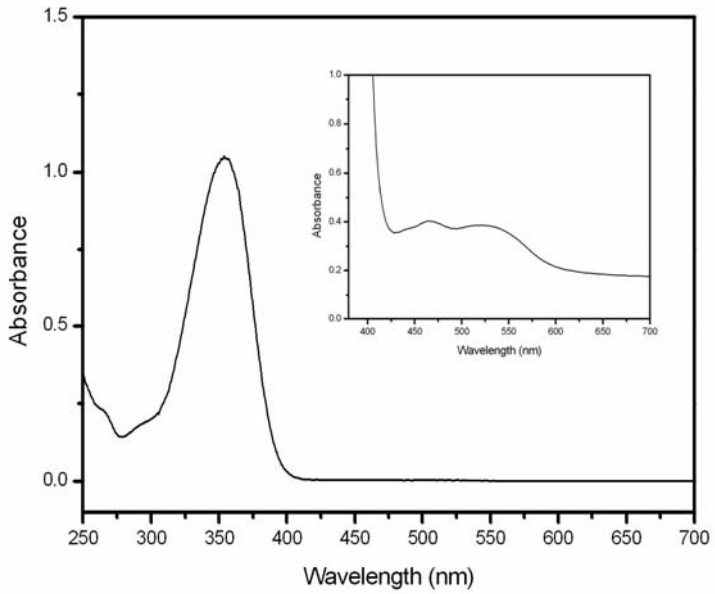



Figure S6. UV-absorption spectra for **3**.