Supporting Information

Ionothermal Synthesis, Magnetic Transformation and Hydration-Dehydration Properties of Co(II)-based Coordination Polymers

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Selected bond lengths (Å) and angles (°) for 1 – 3

Table S1 Selected bond lengths (Å) and angles (°) for **1 – 3.**

Compound 1							
Co1-O2$^{\#1}$	1.9407(15)	O2$^{\#1}$-Co1-O8	118.09(7)	O8-Co1-O11$^{\#2}$	94.26(7)	O2$^{\#1}$-Co1-O5	94.61(6)
Co1-O8	1.9408(16)	O5-Co1-O11$^{\#2}$	118.37(7)	O8-Co1-O5	117.22(7)	O3-N1-O4	123.5(2)
Co1-O11$^{\#2}$	1.9499(17)	O2$^{\#1}$-Co1-O11$^{\#2}$	116.23(7)	O4-N1-C5	117.6(2)		
Symmetry code: #1 -x-1,-y-1,-z+1 #2 -x,-y-1,-z+1							
Compound 2							
Co1-O4	1.967(3)	O4-Co1-O8$^{\#1}$	132.23(13)	O8$^{\#1}$-Co1-O5$^{\#2}$	108.71(13)	O8$^{\#1}$-Co1-O1$^{\#2}$	94.14(14)
Co1-O8$^{\#1}$	1.976(3)	O4-Co1-O1$^{\#2}$	105.81(12)	O1$^{\#2}$-Co1-O5$^{\#2}$	118.19(12)	C13-O1-Co1$^{\#2}$	124.6(3)
Co1-O5$^{\#2}$	1.984(3)	O4-Co1-O(5)$^{\#2}$	99.34(12)	C14-O4-Co1	115.9(3)		
Symmetry code #1 -x+1/2,y-1/2,-z+5/2 #2 -x+1,-y,-z+3							
Compound 3							
Co1-O7	2.0596(18)	Co1-O9$^{\#1}$	2.0858(16)	Co2-O9	2.0736(16)	O7-Co1-O7$^{\#1}$	180.00(5)
Co1-O7$^{\#1}$	2.0596(18)	Co1-O9	2.0858(16)	Co2-O3$^{\#2}$	2.1416(18)	O7-Co1-O2	91.70(8)
Co1-O2	2.0848(17)	Co2-O1$^{\#1}$	2.0159(18)	Co2-O4$^{\#2}$	2.1815(17)	O7$^{\#1}$-Co1-O2	88.30(8)
Co1-O2$^{\#1}$	2.0848(17)	Co2-O8$^{\#1}$	2.0351(19)	Co2-O10	2.278(2)	O7-Co1-O2$^{\#1}$	88.30(8)
O1$^{\#1}$-Co2-O9	97.92(7)	O1$^{\#1}$-Co2-O3$^{\#2}$	95.18(6)	O7$^{\#1}$-Co1-O2$^{\#1}$	91.70(8)	O9-Co2-O3$^{\#2}$	158.46(7)
O8$^{\#1}$-Co2-O9	99.21(7)	O8$^{\#1}$-Co2-O3$^{\#2}$	95.73(7)	O2-Co1-O2$^{\#1}$	180.00(5)	O1$^{\#1}$-Co2-O4$^{\#2}$	155.75(7)
O7-Co1-O9$^{\#1}$	88.58(7)	O8$^{\#1}$-Co2-O4$^{\#2}$	88.98(8	O2-Co1-O9$^{\#1}$	93.90(7)	O3$^{\#2}$-Co2-O4$^{\#2}$	60.95(6)
O7$^{\#1}$-Co1-O9$^{\#1}$	91.42(7)	O9-Co2-O4$^{\#2}$	103.75(7)	O2$^{\#1}$-Co1-O9$^{\#1}$	86.10(7)	O1$^{\#1}$-Co2-O10	96.62(8)
O7$^{\#1}$-Co1-O9	88.58(7)	O8$^{\#1}$-Co2-O10	155.60(8)	O9$^{\#1}$-Co1-O9	180.00(5)	O3$^{\#2}$-Co2-O10	102.08(7)
O2$^{\#1}$-Co1-O9	93.90(7)	O9-Co2-O10	59.51(6)	O1$^{\#1}$-Co2-O8$^{\#1}$	98.26(8)	O4$^{\#2}$-Co2-O10	85.30(7)
Symmetry code: **#1 -x-1,-y,-z+2 #2 -x-1/2,y+1/2,-z+5/2**							

2. Other Characterizations

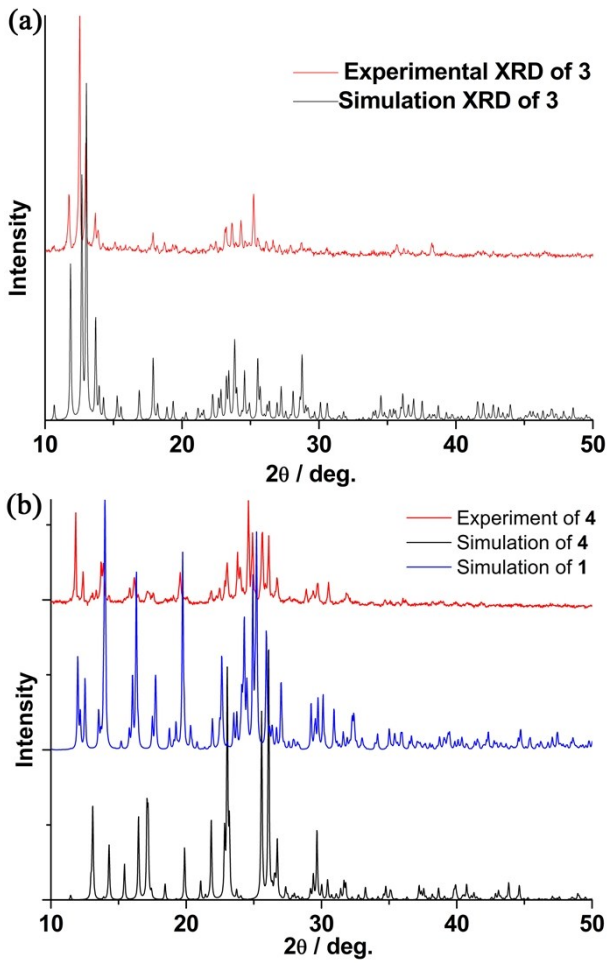

Figure S1 PXRD curve of **3**(a) and **4**(b)

Fig. S2 Photograph representation of the hydration and dehydration processes of compound **2**.

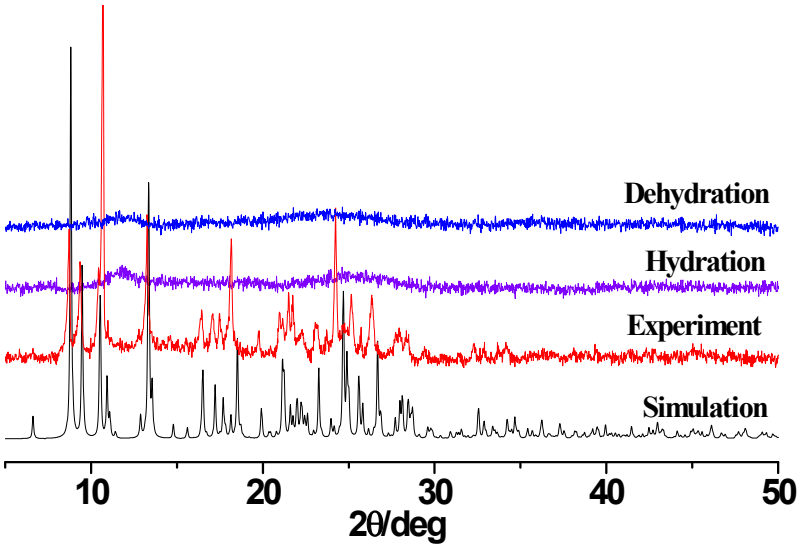

Figure S3. PXRD patterns of **2** on the process of the hydration and dehydration, together with the corresponding simulation according to single-crystal structural determinations.

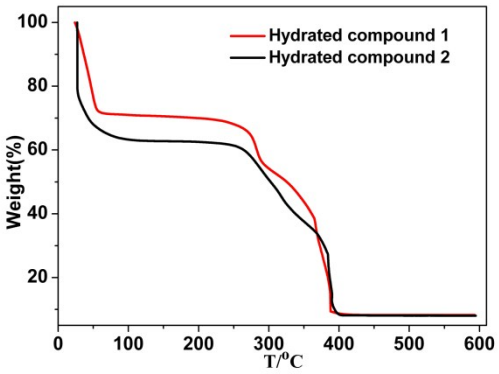

Figure S4. TGA curve for the hydrated **1** and **2**.

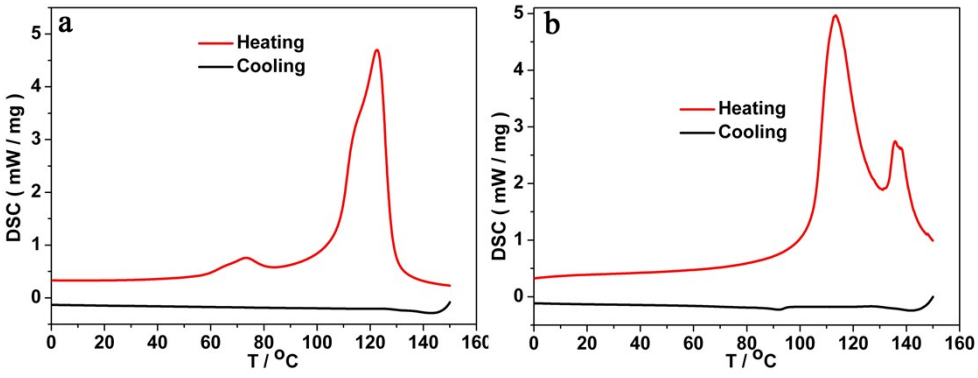

Figure S5. DSC plot of **1b** (a) and **2b** (b).

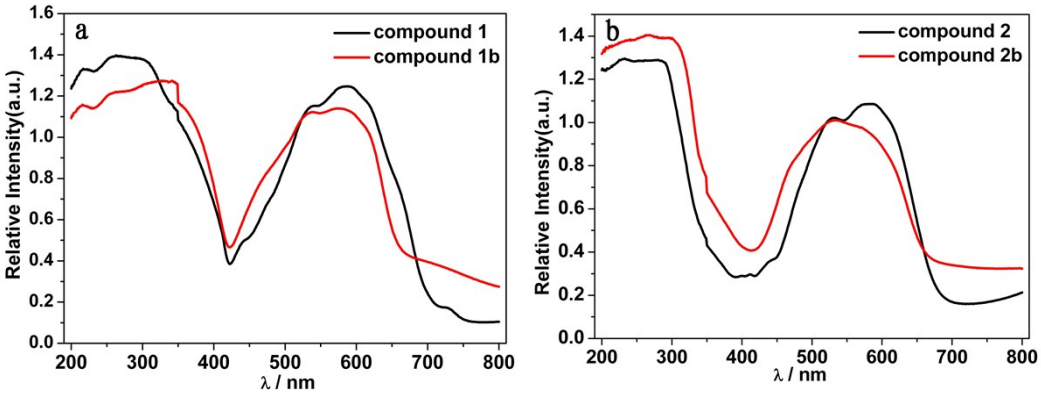

Figure S6. Solid state UV-Vis spectra of **1**, **1b**, **2** and **2b**.