crystals

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Supplementary Materials

Synthesis, Crystal Structures, and Magnetic Properties of Three Cobalt(II) Coordination Polymers Constructed from 3,5-Pyridinedicarboxylic Acid or 3,4-Pyridinedicarboxylic Acid Ligands

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

Co1-O1	2.002(2)	Co2-O5	2.102(2)
Co1-O8^{i}	2.209(2)	Co2-O3	2.000(2)
Co1-O7^{i}	2.214(2)	Co1-N3^{ii}	2.161(2)
Co1-N3^{ii}	2.165(2)	Co2-N5	2.161(2)
Co1-N2	2.097(2)	Co2-N4	2.103(2)
Co1-N1	2.163(3)		
O1-Co1-O8^{i}	90.51(8)	N1-Co1-O7^{i}	81.19(9)
O1-Co1-O7^{i}	148.77(8)	N1-Co1-N3^{ii}	168.76(10)
O1-Co1-N3^{ii}	100.14(9)	O5-Co2-N6^{iii}	93.11(9)
O1-Co1-N2	113.53(9)	O5-Co2-N5	88.42(9)
O1-Co1-N1	91.10(10)	O5-Co2-N4	144.67(9)
O8^{i}-Co1-O7^{i}	59.37(8)	O3-Co2-O5	110.68(9)
N3-Co1-O8^{i}	91.16(9)	O3-Co2-N6	88.96(9)
N3^{ii}-Co1-O7^{i}	89.33(8)	O3-Co2-N5	99.61(9)
N2-Co1-O8^{i}	152.38(9)	O3-Co2-N4	103.70(9)
N2-Co1-O7i	94.38(9)	N5-Co2-N6^{iii}	170.15(9)
N2-Co1-N3^{ii}	97.38(10)	N4-Co2-N6^{iii}	95.45(10)
N2-Co1-N1	77.38(10)	N4-Co2-N5	77.89(10)
N1-Co1-O8^{i}	89.19(9)		

Symmetry transformations used to generate equivalent atoms:(i) x, y, $z-1$; (ii) $-x+3/2$, $y+1/2$, $-z+1/2$; (iii) $-x+3/2$, $y+1/2$, $-z+3/2$;

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

Co1-O1	2.064(2)	Co1-N1^{i}	2.134(2)
Co1-N3	2.105(2)	Co1-O3^{ii}	2.170(2)
Co1-N2	2.126(3)	Co1-O4^{ii}	2.2569(18)
O1-Co1-N3	129.63(9)	N2-Co1-O3^{ii}	90.30(9)
O1-Co1-N2	84.76(9)	N1i-Co1-O3^{ii}	96.49(9)
N3-Co1-N2	76.66(9)	O1-Co1-O4^{ii}	147.07(9)
O1-Co1-N1^{i}	92.27(9)	N3-Co1-O4^{ii}	82.54(8)
N3-Co1-N1^{i}	100.18(8)	N2-Co1-O4^{ii}	98.61(9)
N2-Co1-N1^{i}	172.50(10)	N1^{i}-Co1-O4^{ii}	87.64(9)

O1-Co1-O3^{ii}	87.90(8)	O3^{ii}-Co1-O4^{ii}	59.46(7)
N3-Co1-O3^{ii}	137.63(9)		

Symmetry transformations used to generate equivalent atoms:(i) *x*, *y*, *z*−1; (ii) −*x*+3/2, *y*+1/2, −*z*+1/2;

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

Co1-O4^{i}	2.228(3)	Co1-O3^{i}	2.177(2)
Co1-N3	2.122(3)	Co1-N2	2.088(3)
Co1-N1	2.172(3)	Co1-O2^{ii}	2.000(3)
N3-Co1-O4^{i}	84.43(11)	N2-Co1-N1	98.36(11)
N3-Co1-N1	172.63(13)	N2-Co1-O3	153.89(11)
N3-Co1-O3^{i}	94.00(11)	O2^{ii}-Co1-O4^{i}	158.10(9)
N1-Co1-O4^{i}	90.19(11)	O2^{ii}-Co1-N3	89.30(12)
N1-Co1-O3^{i}	87.59(10)	O2^{ii}-Co1-N1	97.52(12)
O3^{i}-Co1-O4^{i}	94.72(12)	O2^{ii}-Co1-O3^{i}	100.02(11)
N2-Co1-N3	77.13(12)	O2^{ii}-Co1-N2	104.33(13)

Symmetry transformations used to generate equivalent atoms:(i) *x*, *y*, *z*−1; (ii) −*x*+3/2, *y*+1/2, −*z*+1/2;

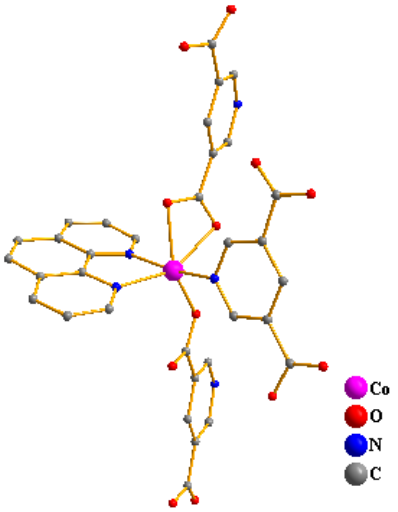

Fig. S1 Coordination sphere of Co atom in compound **1** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity).

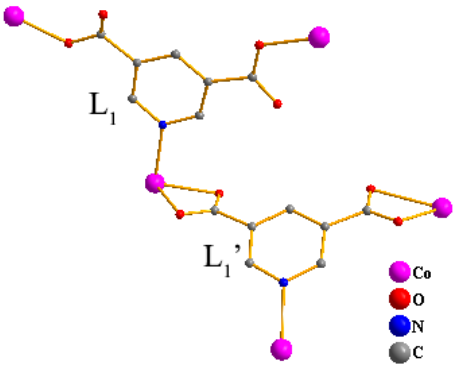

Fig. S2 Coordination sphere of liagnd (L_1 and L_1') in compound **1** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity).

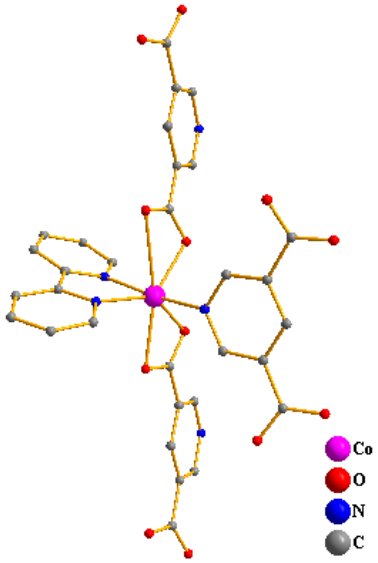

Fig. S3 Coordination sphere of Co atom in compound **2** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity).

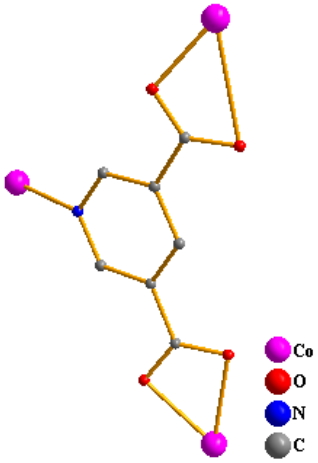

Fig. S4 Coordination sphere of L_1 in compound **2** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity).

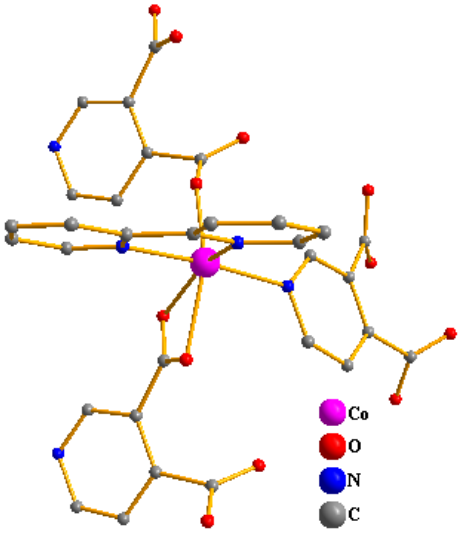

Fig. S5 Coordination sphere of Co atom in compound **3** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity).

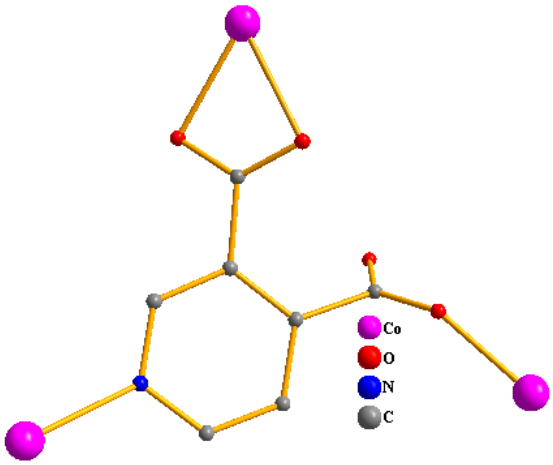

Fig. S6 Coordination sphere of L_2 in compound **3** (Co atom: pink, N atoms: blue, O atoms: red, H atoms are omited for clarity)

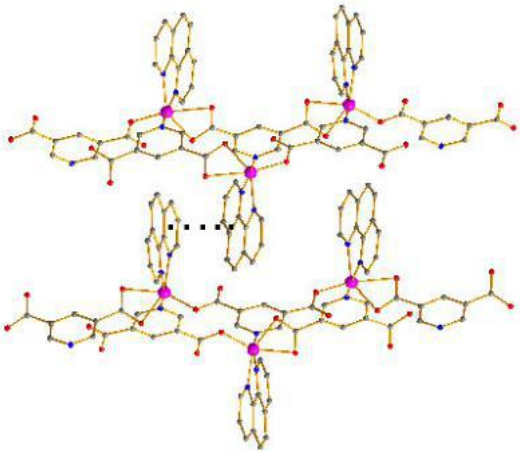

Fig. S7 3D supramolecular architecture of compound 1 formed by π···π interactions of 3.34–3.45Å

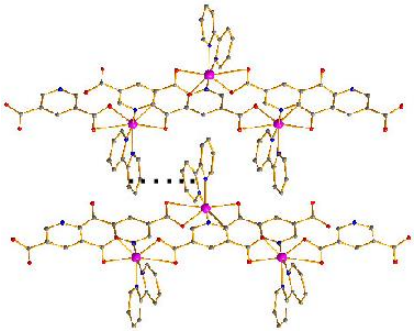

Fig. S8 3D supramolecular architecture of compound 2 formed by π···π interactions of 3.66–3.80 Å

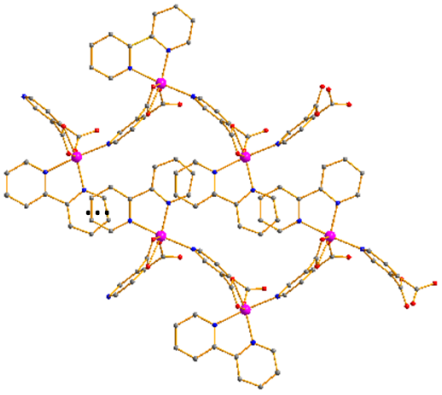

Fig. S9 3D supramolecular architecture of compound 3 formed by π···π interactions of 3.56–3.92 Å

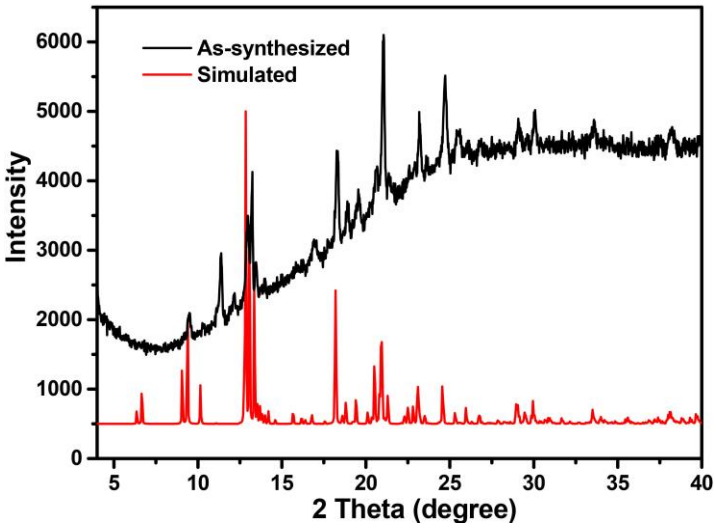

Fig. S10 The PXRD of compound **1**.

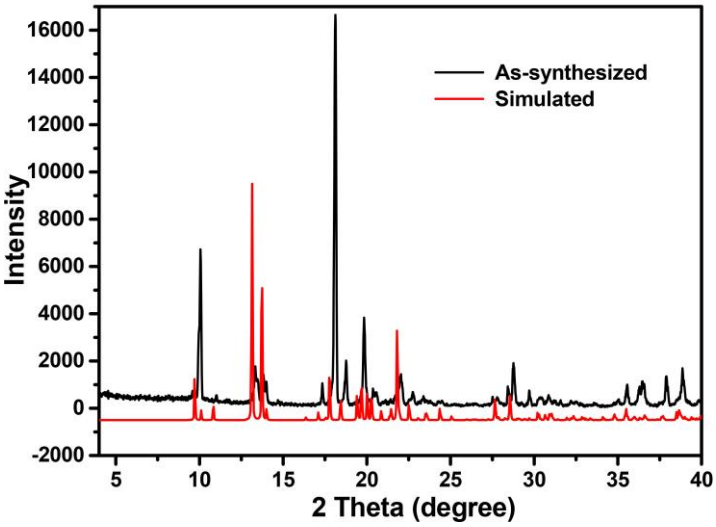

Fig. S11 The PXRD of compound **2**.

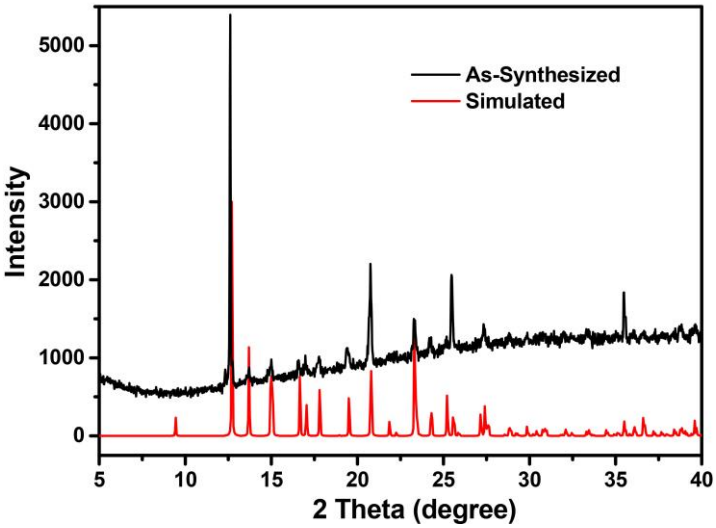

Fig. S12 The PXRD of compound **3**.

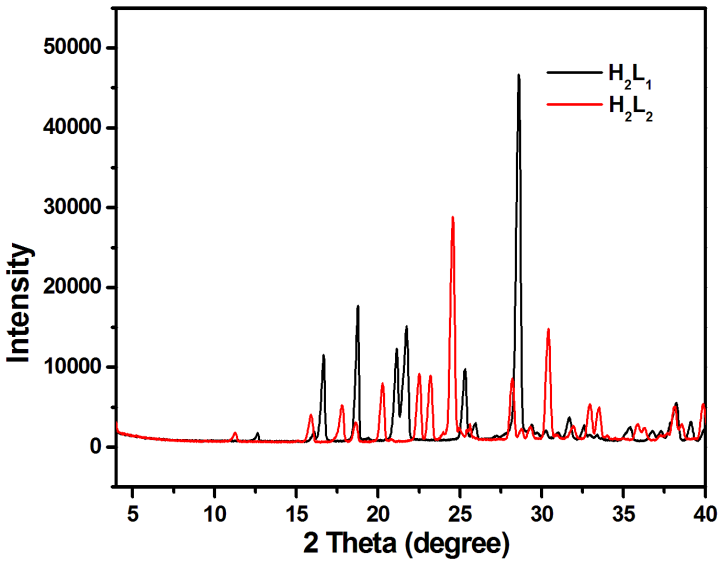

Fig. S13 The PXRD of the ligands of H_2L_1, H_2L_2.

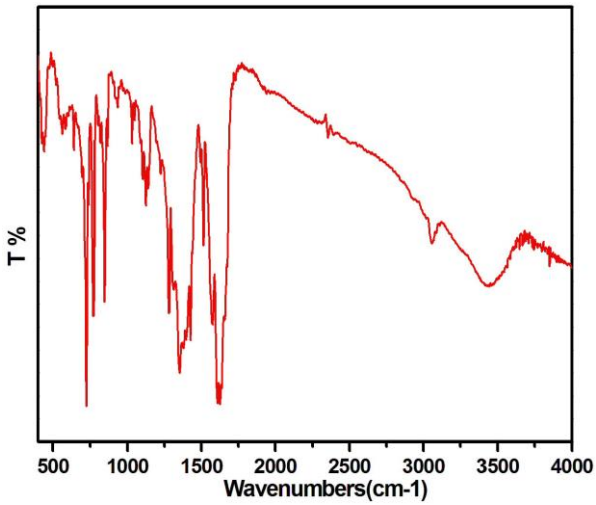

Fig. S14 The IR spectrum of compound **1**.

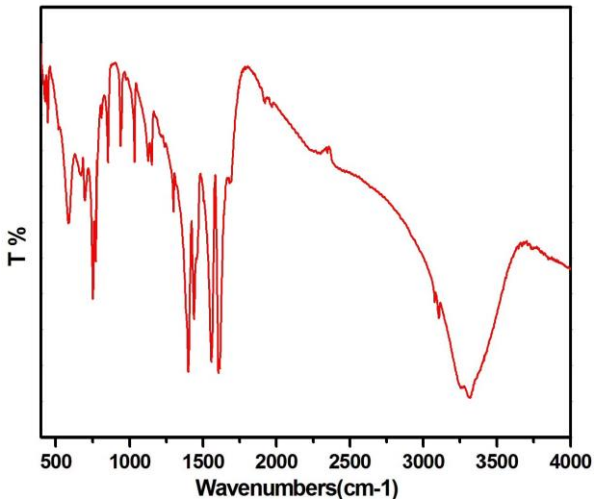

Fig. S15 The IR spectrum of compound **2**.

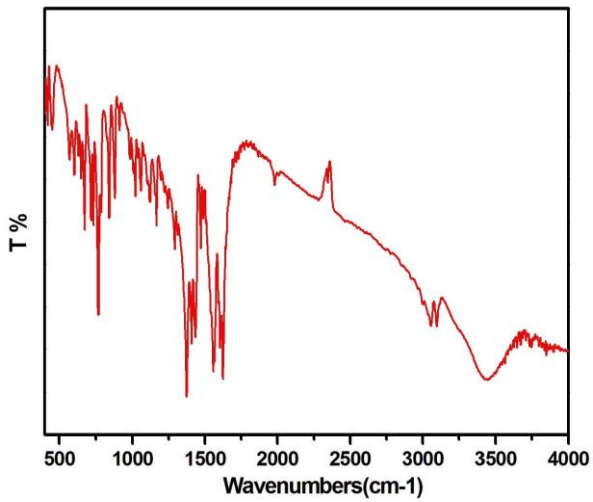

Fig. S16 The IR spectrum of compound **3**.

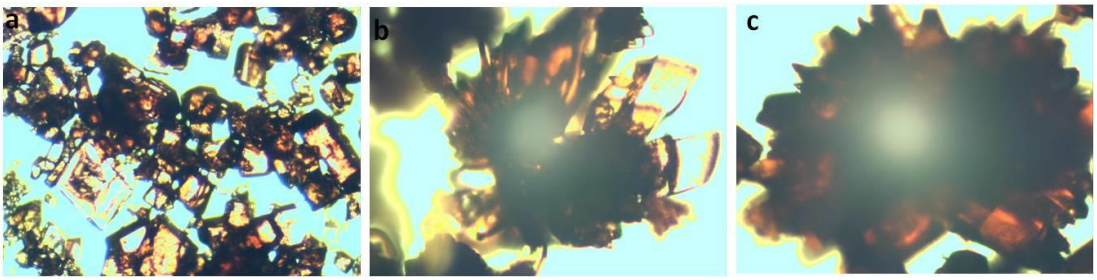

Fig. S17 The photo graphs of compound **1-3 (**a: compound 1; b: compound 2; c: compound 3)

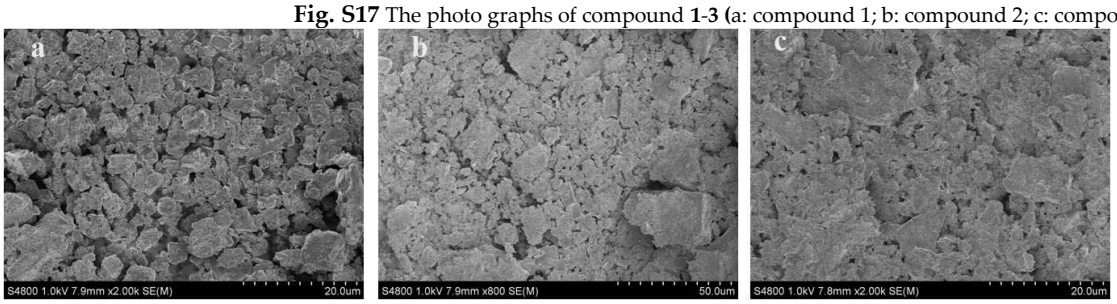

Fig. S18 The SEM images of compound **1-3 (**a: compound 1; b: compound 2; c: compound 3)