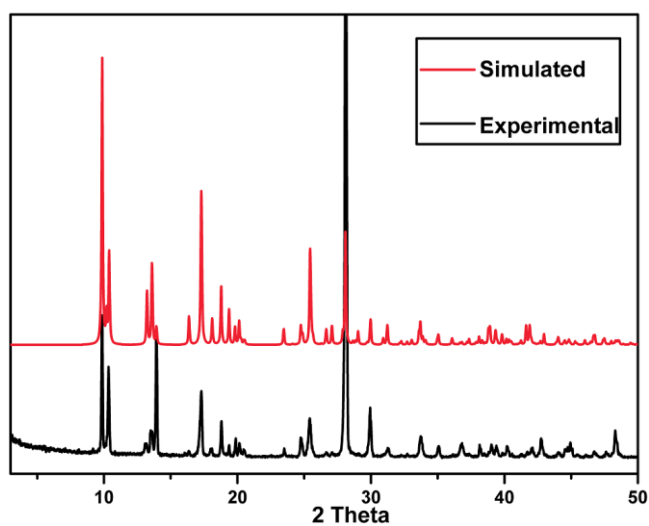


## Electronic Supplementary Information (ESI)

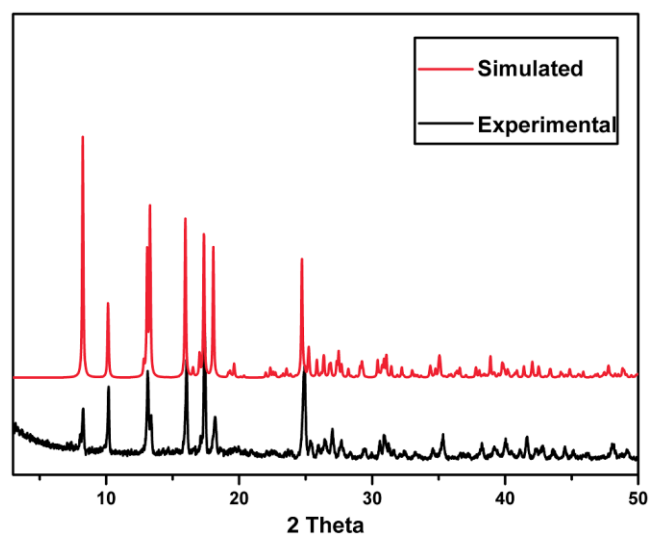
### Two new Co<sup>II</sup> coordination polymers based on carboxylate-bridged di- and trinuclear clusters with a pyridinedicarboxylate ligand: synthesis, structures and magnetism

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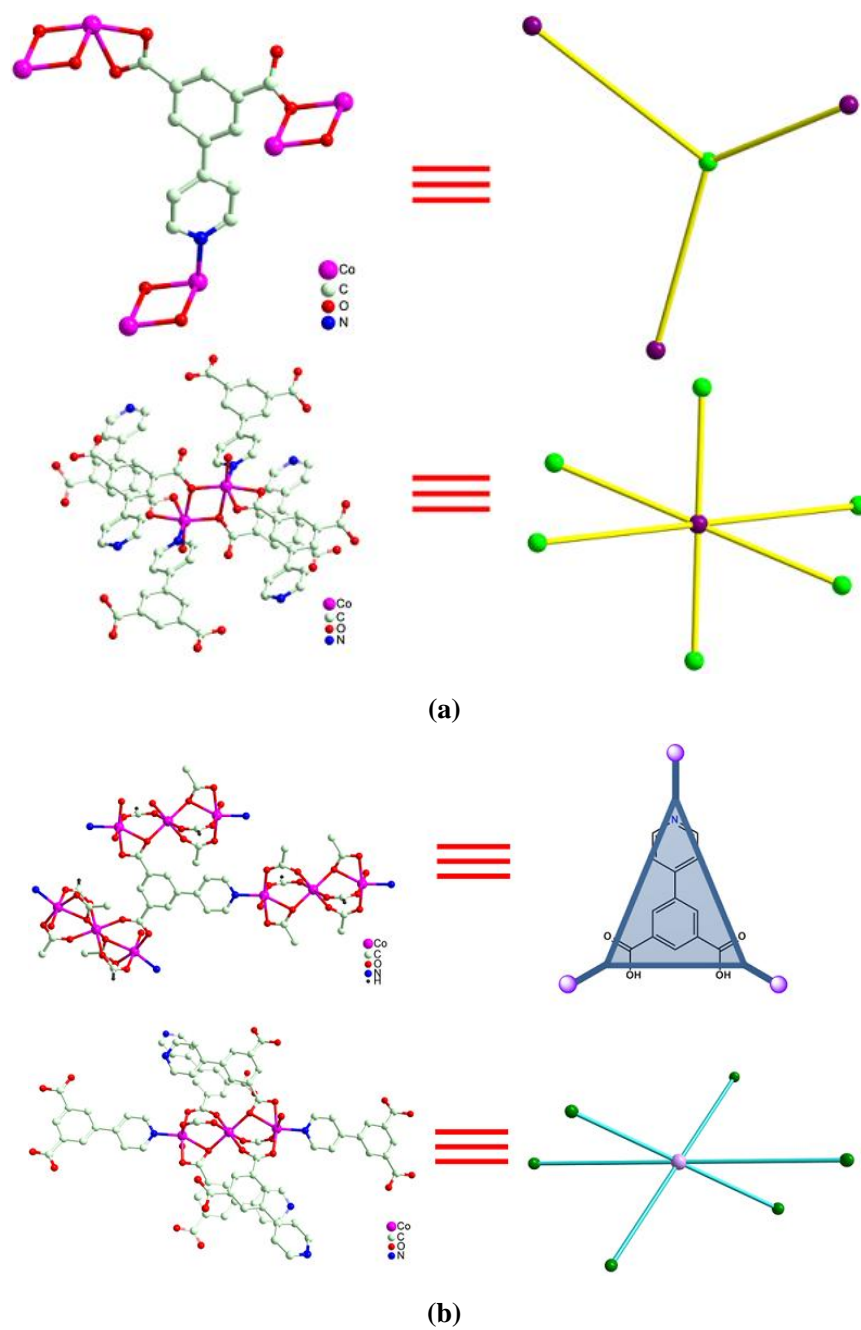


(a)



(b)

**Fig. S1.** X-ray powder diffraction (XRPD) patterns of (a) **1**, and (b) **2**.



**Fig. S2.** The topology analysis of (a) 1, and (b) 2.

**Table S1.** Selected bond lengths (Å) and angles (°) for complex **1**<sup>a</sup>

Co(1)-O(4) <sup>#1</sup>	2.041(2)	Co(1)-O(1W)	2.117(3)
Co(1)-N(1) <sup>#2</sup>	2.087(3)	Co(1)-O(4)	2.250(2)
Co(1)-O(2) <sup>#3</sup>	2.104(2)	Co(1)-O(1) <sup>#3</sup>	2.255(2)
O(4) <sup>#1</sup> -Co(1)-N(1) <sup>#2</sup>	104.55(10)	O(2) <sup>#3</sup> -Co(1)-O(4)	97.43(9)
O(4) <sup>#1</sup> -Co(1)-O(2) <sup>#3</sup>	162.54(8)	O(1W)-Co(1)-O(4)	170.12(11)
N(1) <sup>#2</sup> -Co(1)-O(2) <sup>#3</sup>	92.39(10)	O(4) <sup>#1</sup> -Co(1)-O(1) <sup>#3</sup>	102.62(9)
O(4) <sup>#1</sup> -Co(1)-O(1W)	95.22(11)	N(1) <sup>#2</sup> -Co(1)-O(1) <sup>#3</sup>	152.44(9)
N(1) <sup>#2</sup> -Co(1)-O(1W)	92.66(13)	O(2) <sup>#3</sup> -Co(1)-O(1) <sup>#3</sup>	60.20(9)
O(2) <sup>#3</sup> -Co(1)-O(1W)	88.06(11)	O(1W)-Co(1)-O(1) <sup>#3</sup>	89.37(12)
O(4) <sup>#1</sup> -Co(1)-O(4)	77.13(9)	O(4)-Co(1)-O(1) <sup>#3</sup>	86.27(8)
N(1) <sup>#2</sup> -Co(1)-O(4)	95.31(9)		

<sup>a</sup>Symmetry codes: #1: -x+2, -y+3, -z+2; #2: -x+1, -y+2, -z+1; #3: -x+2, -y+2, -z+2.

**Table S2.** Selected bond lengths (Å) and angles (°) for complex **2**<sup>a</sup>

Co(1)-O(6)	2.053(6)	Co(2)-O(3)	2.034(5)
Co(1)-O(4)	2.053(5)	Co(2)-O(5) <sup>#3</sup>	2.116(6)
Co(1)-N(1) <sup>#1</sup>	2.099(6)	Co(2)-O(2) <sup>#4</sup>	2.122(5)
Co(1)-O(1) <sup>#2</sup>	2.112(5)	Co(1)-O(1W)	2.107(7)
Co(1)-O(2) <sup>#2</sup>	2.289(5)		
O(6)-Co(1)-O(4)	94.6(2)	O(4)-Co(1)-O(2) <sup>#2</sup>	106.57(19)
O(6)-Co(1)-N(1) <sup>#1</sup>	91.2(2)	N(1) <sup>#1</sup> -Co(1)-O(2) <sup>#2</sup>	154.3(2)
O(4)-Co(1)-N(1) <sup>#1</sup>	97.8(2)	O(1) <sup>#2</sup> -Co(1)-O(2) <sup>#2</sup>	59.75(18)
O(6)-Co(1)-O(1) <sup>#2</sup>	92.1(2)	O(1W)-Co(1)-O(2) <sup>#2</sup>	82.3(2)
O(4)-Co(1)-O(1) <sup>#2</sup>	165.3(2)	O(3)-Co(2)-O(5) <sup>#3</sup>	87.0(2)
N(1) <sup>#1</sup> -Co(1)-O(1) <sup>#2</sup>	95.2(2)	O(3)-Co(2)-O(5)	93.0(2)
O(6)-Co(1)-O(1W)	177.0(2)	O(3)-Co(2)-O(2) <sup>#4</sup>	94.2(2)
O(4)-Co(1)-O(1W)	86.7(3)	O(3) <sup>#3</sup> -Co(2)-O(2) <sup>#4</sup>	85.8(2)
N(1) <sup>#1</sup> -Co(1)-O(1W)	91.2(3)	O(5) <sup>#3</sup> -Co(2)-O(2) <sup>#4</sup>	92.0(2)
O(1) <sup>#2</sup> -Co(1)-O(1W)	85.9(3)	O(5)-Co(2)-O(2) <sup>#4</sup>	88.0(2)
O(6)-Co(1)-O(2) <sup>#2</sup>	94.7(2)	O(3)-Co(2)-O(2) <sup>#2</sup>	85.8(2)

<sup>a</sup>Symmetry codes: #1: -x+1, y-1/2, -z+1/2; #2: -x+2, y-1/2, -z+3/2; #3: -x+2, -y, -z+2; #4: x, -y+1/2, z+1/2.