Cobalt and copper pyridylmethylphosphonates with two- and three-dimensional structures and field-induced magnetic transitions

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Supporting Information

Contents

Figure S1: The layer structure of **1**.

Figure S2: The π–π stacking interaction in compound **1**

Figure S3: Layer topological structure of **1**

Figure S4: Topological structure of **2**

Figure S5: PXRD pattern for compound **1** with simulated one from single crystal data

Figure S6: PXRD pattern for compound **2** with simulated one from single crystal data

Figure S7: TG curves of complexes **1** and **2**

Figure S8: The χ_M^{-1} versus *T* plots for compound **1**

Figure S9: Temperature-dependent zero-field ac magnetic susceptibility for **1**

Figure S10: Differentiation of *M* versus *H* curve of **1**.

Figure S11: The χ_M^{-1} versus *T* plots for compound **2**

Figure S12:Temperature-dependent zero-field ac magnetic susceptibility for **2**

Figure S13: Differentiation of *M* versus *H* curve of **3**.

Table S1 Selected bond lengths [Å] and angles [°] for **1**

Table S2 Selected bond lengths [Å] and angles [°] for **2**

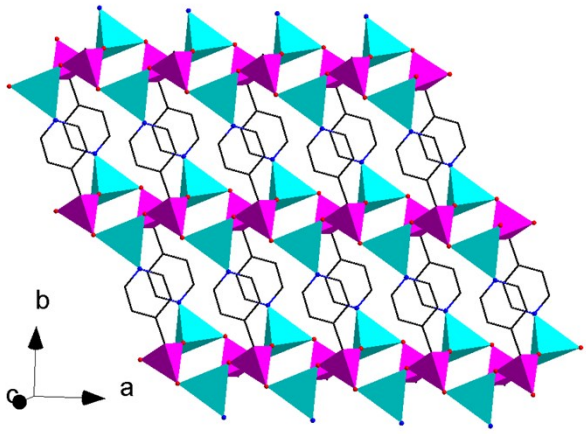

Figure S1 The layer structure of **1**. Cyan tetrahedron, $CoNO_3$; pink tetrahedron, PO_3C.

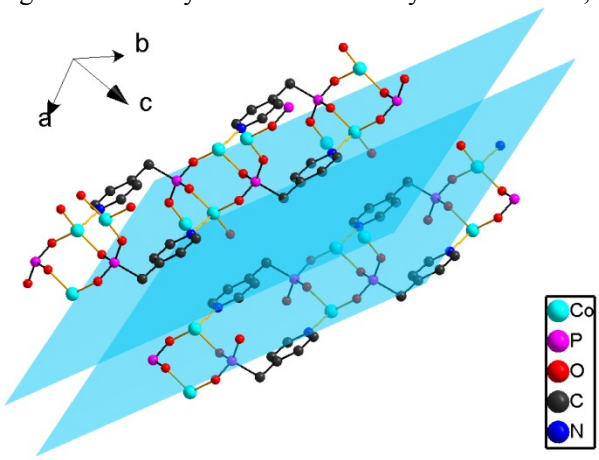

Figure S2 The π–π stacking interaction in compound **1** .

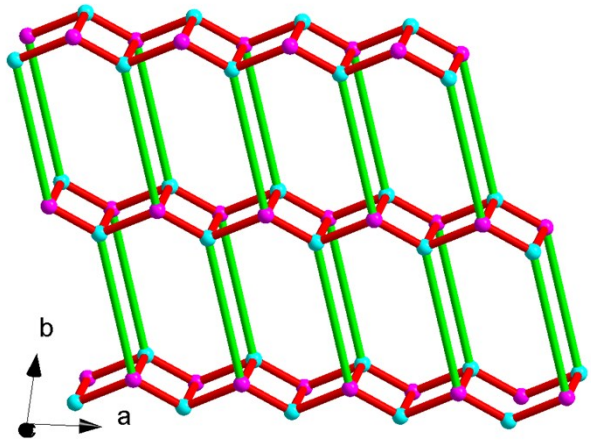

Figure S3 Layer topological structure of **1**. Cyan ball, Co atom; pink ball, P atom.

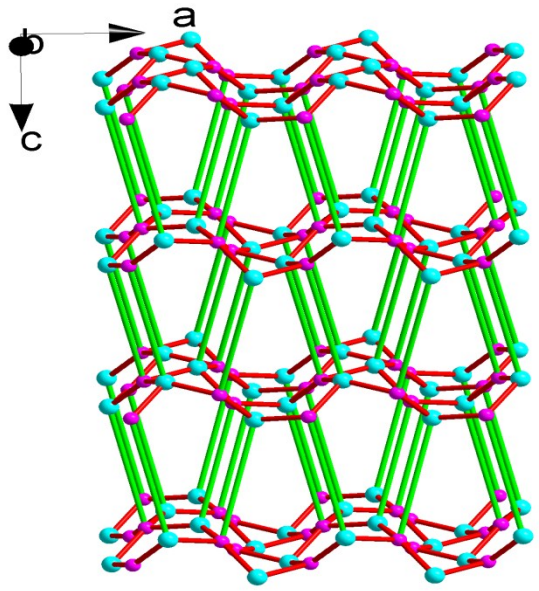

Figure S4 Topological structure of **2**. Cyan ball, Cu atom; pink ball, P atom.

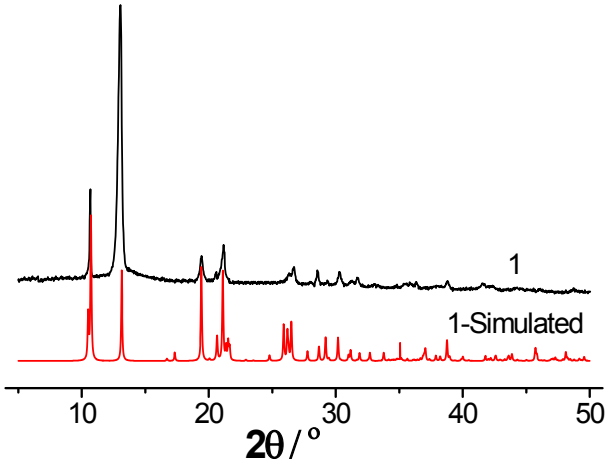

Figure S5 PXRD pattern for compound **1** with simulated one from single crystal data.

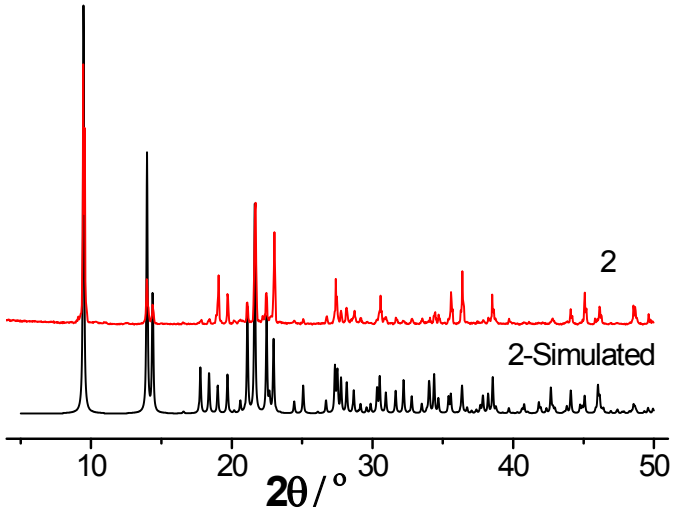

Figure S6 PXRD pattern for compound **2** with simulated one from single crystal data.

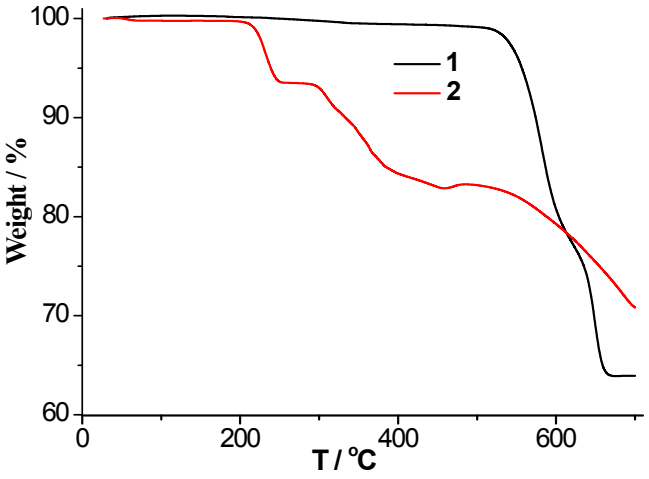

Figure S7 TG curves of complexes **1** and **2** (heating rate of 10 ◦Cmin^{-1}).

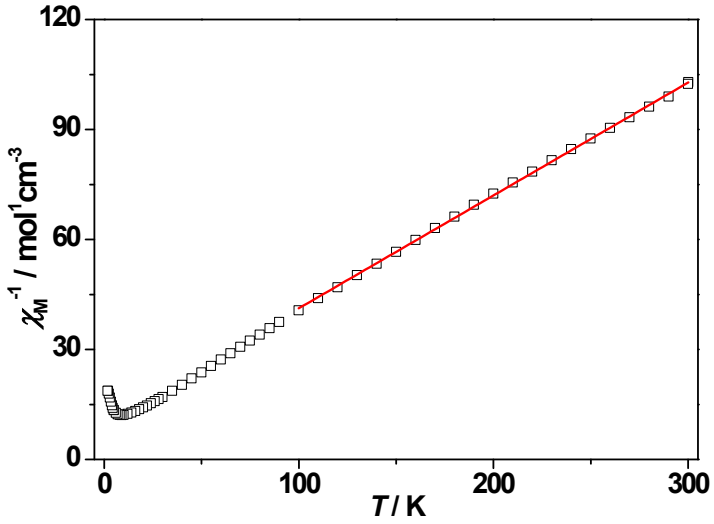

Figure S8 The χ_M^{-1} versus *T* plots for compound **1**.

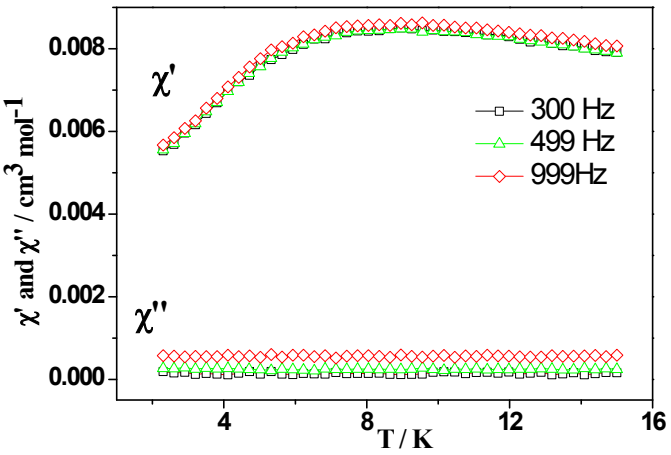

Figure S9 Temperature-dependent zero-field ac magnetic susceptibility for **1**.

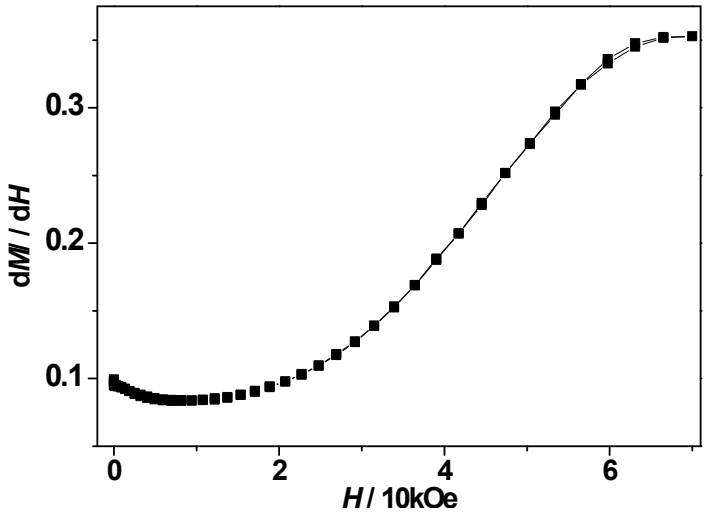

Figure S10 Differentiation of *M* versus *H* curve of **1**.

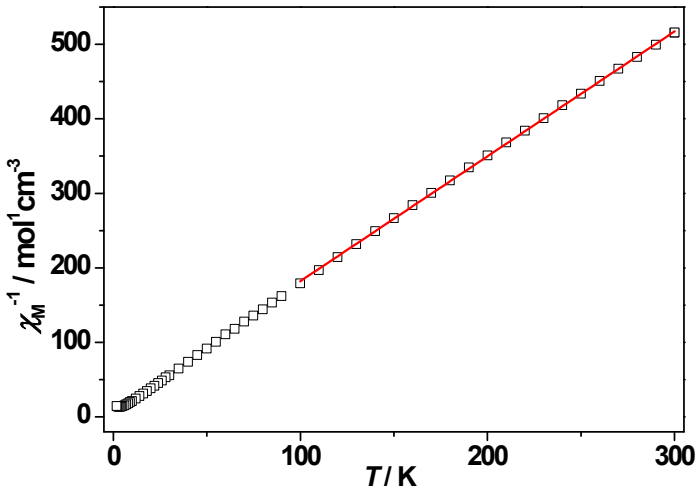

Figure S11 The χ_M^{-1} versus *T* plots for compound **2**.

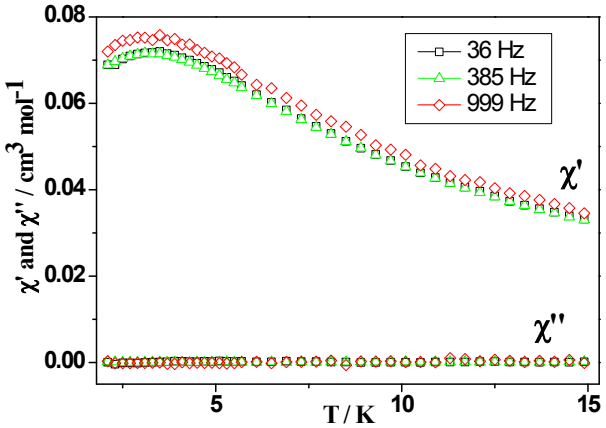

Figure S12 Temperature-dependent zero-field ac magnetic susceptibility for **2**.

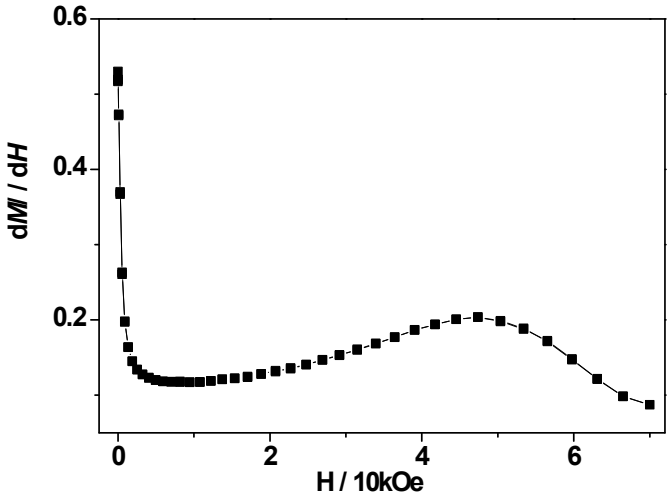

Figure S13 Differentiation of *M* versus *H* curve of **2**.

Table S1 Selected bond lengths [Å] and angles [°] for **1**.

Co(1)-O(2A)	1.937(2)	P(1)-O(1)	1.530(2)
Co(1)-O(1)	1.974(2)	P(1)-O(2)	1.523(2)
Co(1)-O(3B)	1.944(2)	P(1)-O(3)	1.519(2)
Co(1)-N(1C)	2.049(3)	P(1)-C(1)	1.812(3)
O(2A)-Co(1)-O(3B)	120.64(10)	O(2A)-Co(1)-O(1)	115.65(10)
O(3B)-Co(1)-O(1)	107.94(9)	O(2A)-Co(1)-N(1C)	97.60(10)
O(3B)-Co(1)-N(1C)	109.50(10)	O(1)-Co(1)-N(1C)	103.49(10)

Sysmmerty codes : A: -x+1,-y,-z+1; B: x+1,y,z; C: x-1,y,z.

Table S2 Selected bond lengths [Å] and angles [°] for **2**.

Cu(1)-O(1)	1.9579(14)	Cu(1)-N(1C)	2.2320(17)
Cu(1)-O(2B)	1.9938(14)	P(1)-O(1)	1.5181(13)
Cu(1)-O(3A)	1.9869(14)	P(1)-O(2)	1.5326(14)
Cu(1)-O(4)	1.9755(14)	P(1)-O(3)	1.5248(15)
O(1)-Cu(1)-O(3A)	90.26(6)	O(1)-Cu(1)-O(2B)	89.43(6)
O(4)-Cu(1)-O(3A)	86.61(6)	O(4)-Cu(1)-O(2B)	91.22(6)
O(1)-Cu(1)-N(1C)	95.86(6)	O(4)-Cu(1)-N(1C)	92.93(6)
O(3A)-Cu(1)-N(1C)	90.01(6)	O(2B)-Cu(1)-N(1C)	105.57(6)

Sysmmerty codes : A: x+1/2,y,-z+3/2; B: -x,y-1/2,-z+3/2 ; C: x,-y+3/2,z+1/2.