Supporting information for DT-ART-04-2011-010631

Synthesis, Characterization, and Single-Molecule Metamagnetism of New Co(II) Polynuclear Complexes of Pyridine-2-ylmethanol

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Content

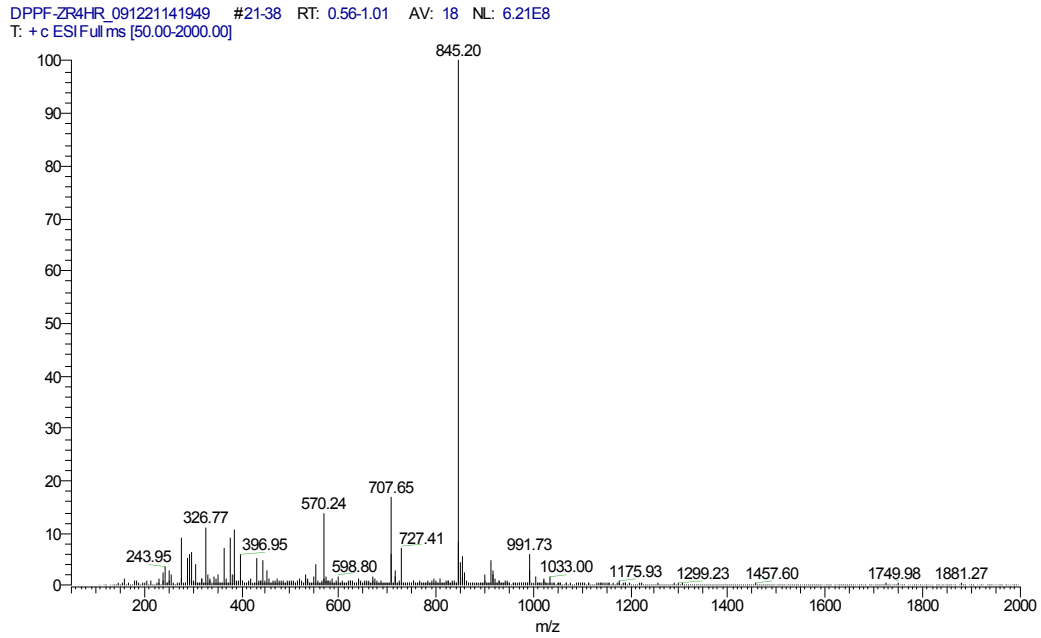

Figure S-1: ESI-MS spectrum of a solution containing $[CaCo_6L_{12}]^{2+}$ (see main text). Calculated *m/z* (doubly charged): 845.2.

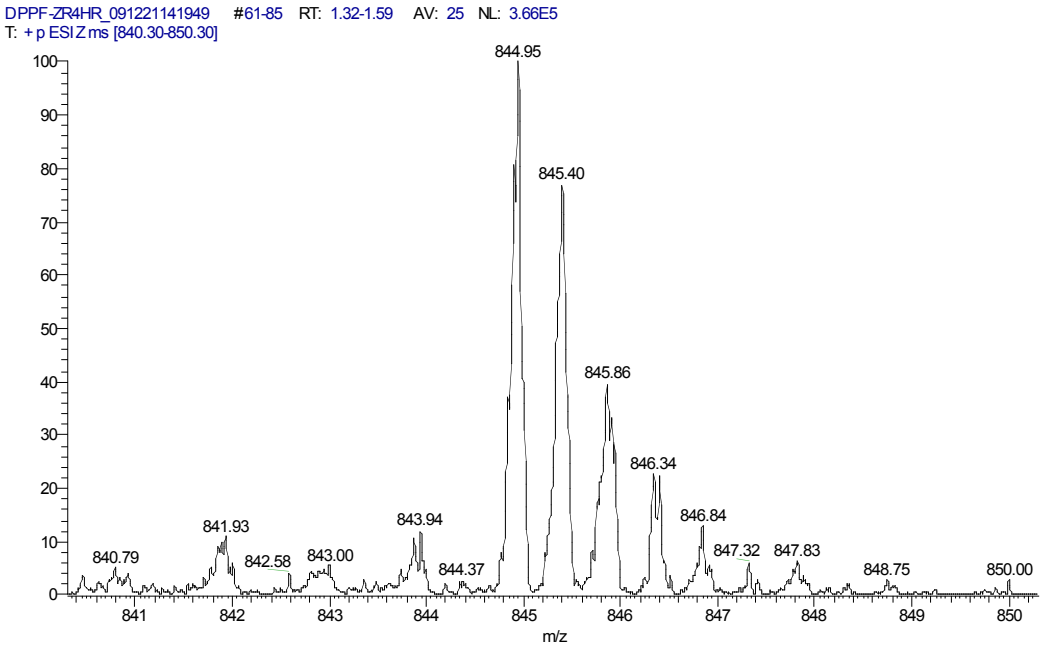

Figure S-2: Zoom of the ESI-MS spectrum (Figure S-1) of a solution containing $[CaCo_6L_{12}]^{2+}$ (see main text). Calculated *m/z* (doubly charged): 845.2.

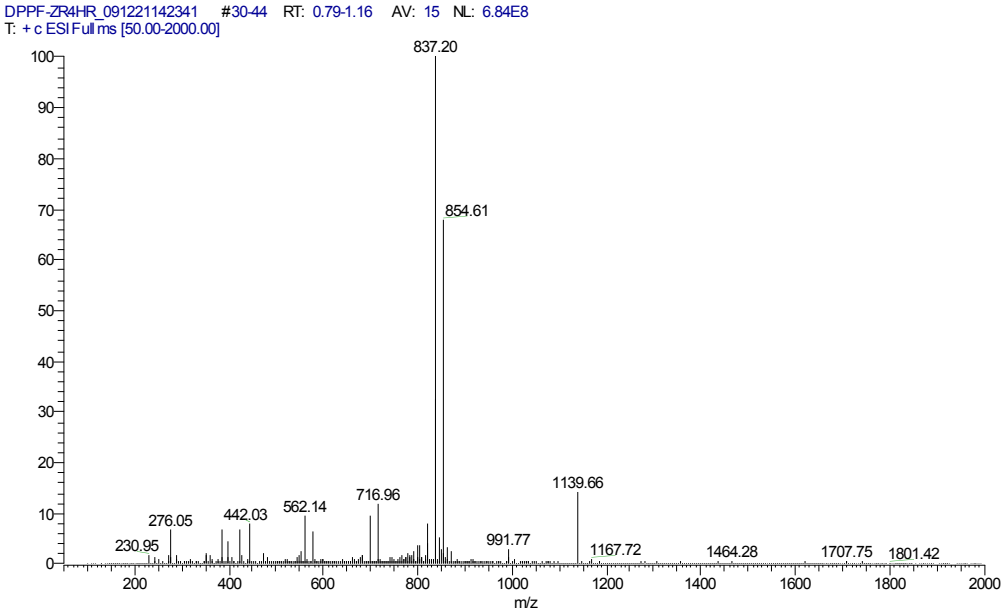

Figure S-3: ESI-MS spectrum of a solution containing $[Co_6MgL_{12}]^{2+}$ (see main text). Calculated *m/z* (doubly charged): 837.2.

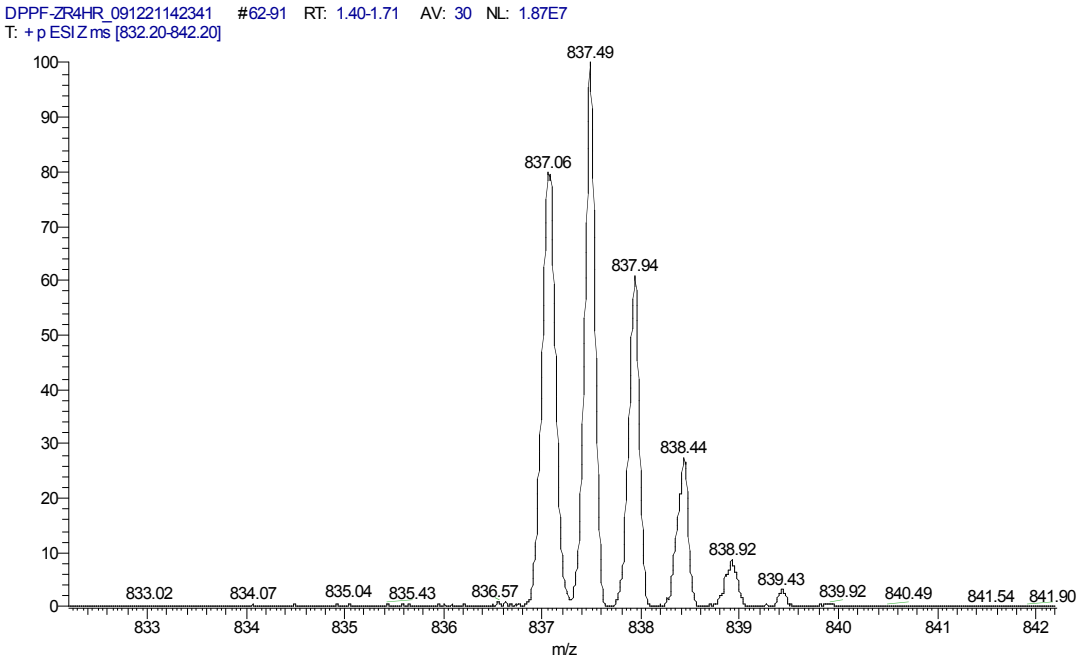

Figure S-4: Zoom of the ESI-MS spectrum (Figure S-1) of a solution containing $[Co_6MgL_{12}]^{2+}$ (see main text). Calculated *m/z* (doubly charged): 837.2.

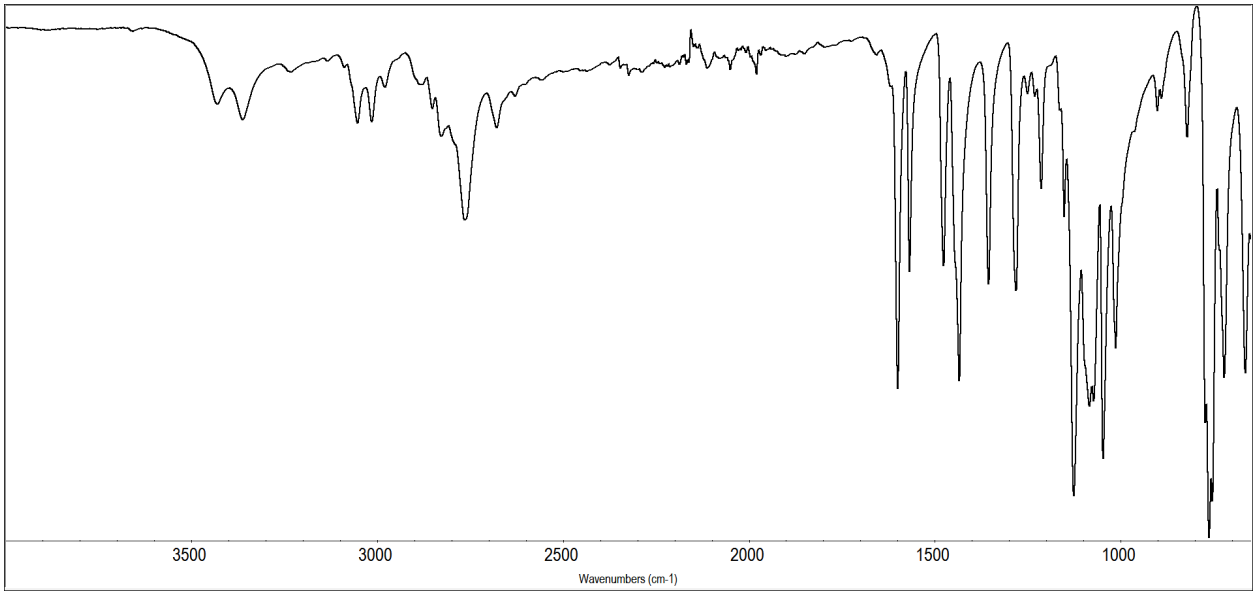

Figure S-5: FTIR spectrum of solid **1** (crystals).

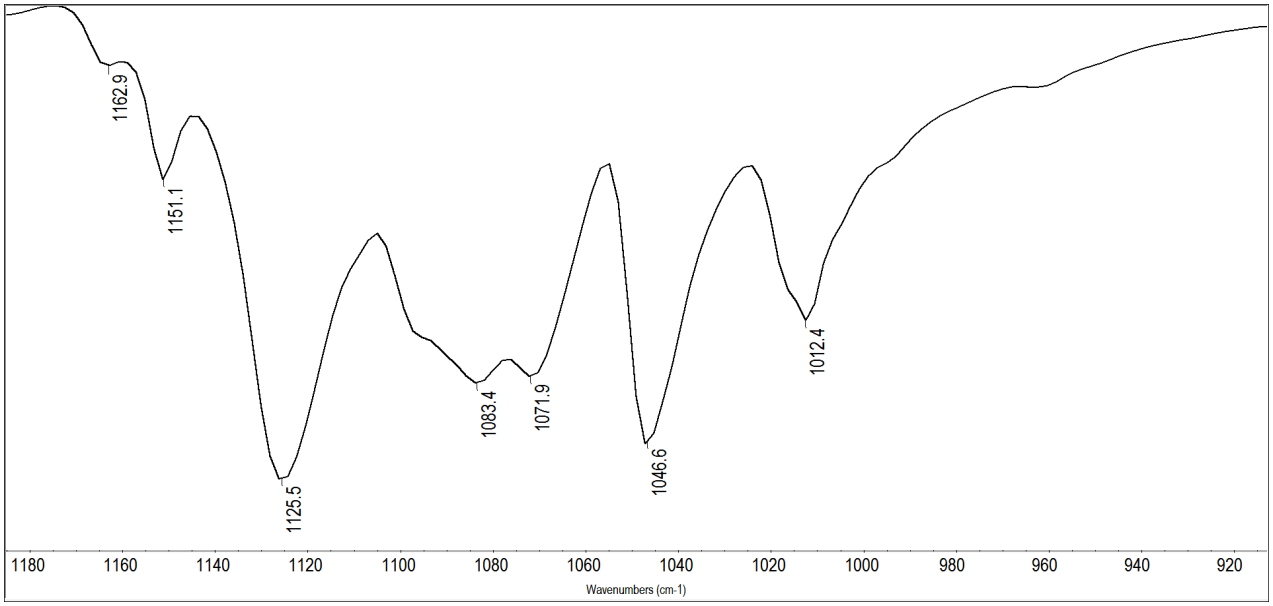

Figure S-6: Zoom of FTIR spectrum of solid **1** (crystals), showing the diagnostic C-O pattern.

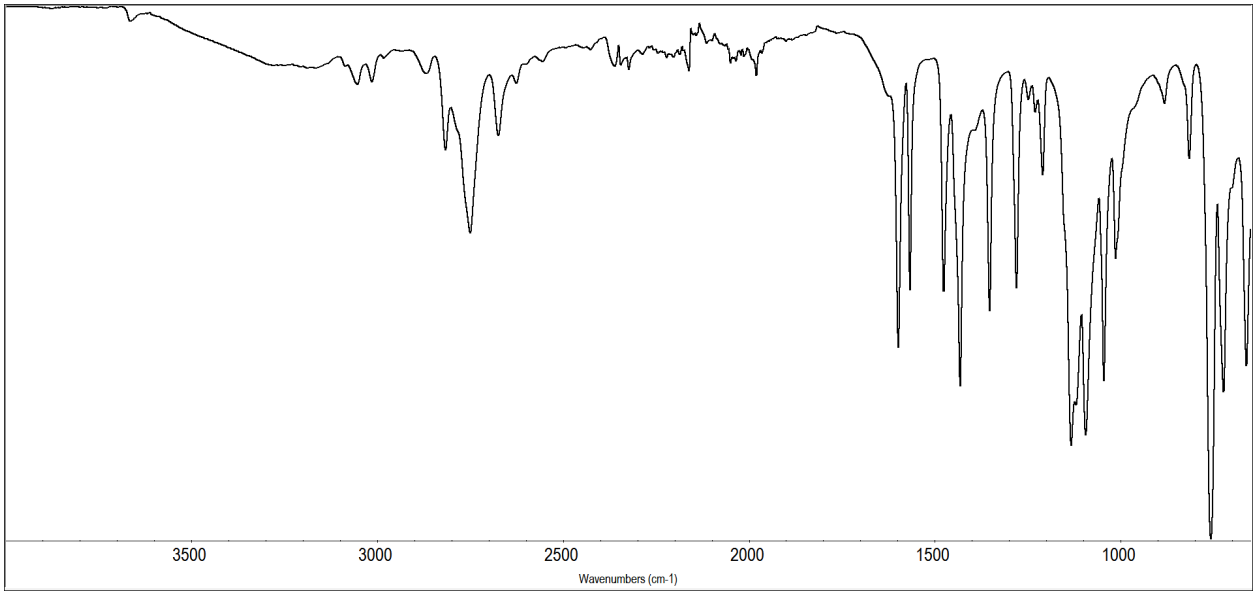

Figure S-7: FTIR spectrum of solid **2** (crystals).

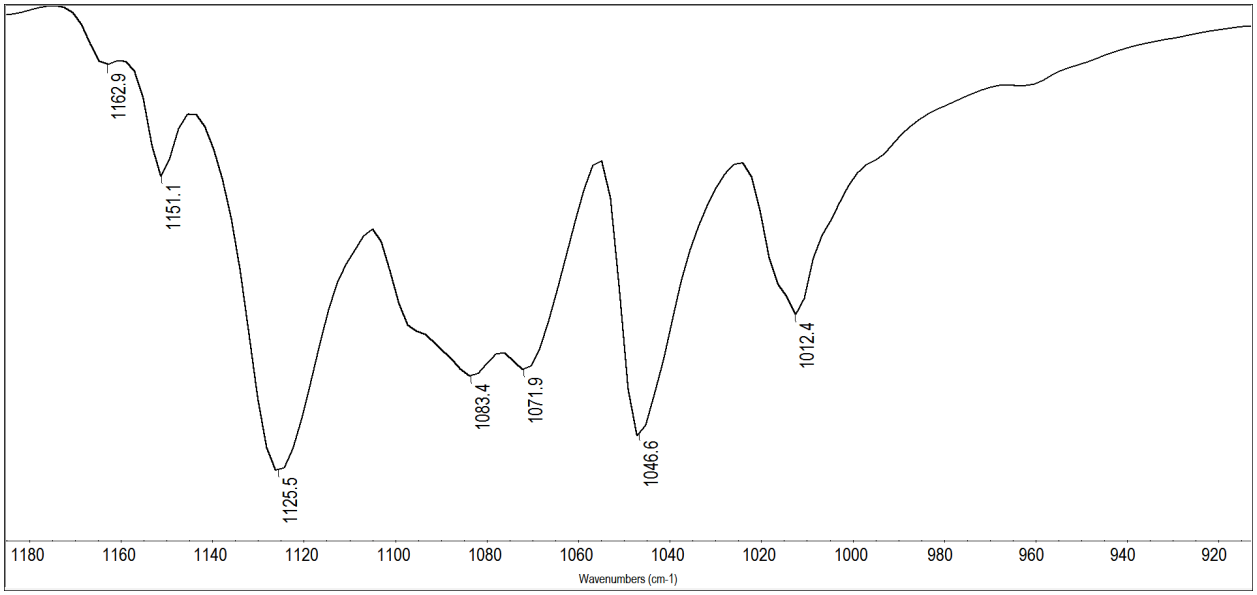

Figure S-8: Zoom of FTIR spectrum of solid **2** (crystals), showing the diagnostic C-O pattern.

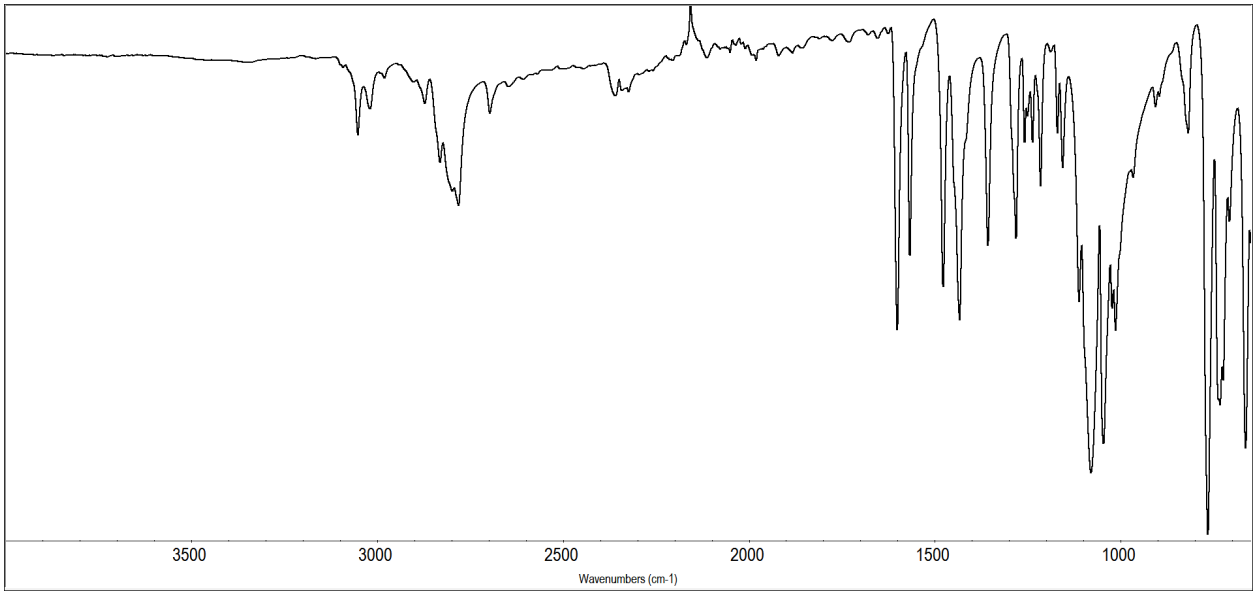

Figure S-9: FTIR spectrum of solid **3** (crystals).

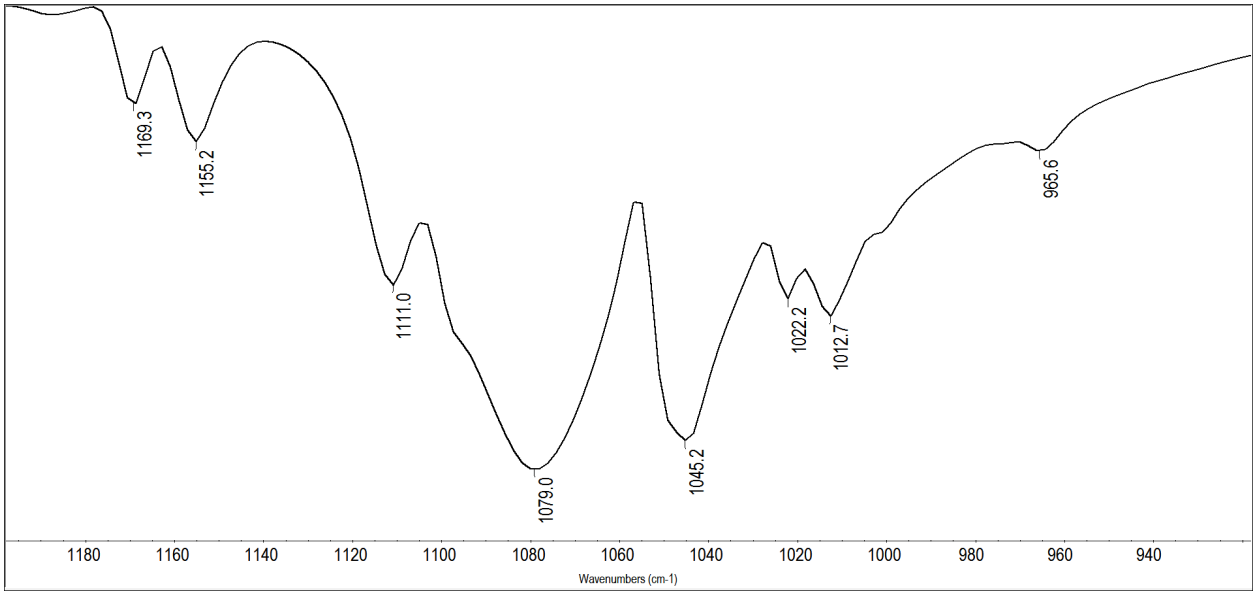

Figure S-10: Zoom of FTIR spectrum of solid **3** (crystals), showing the diagnostic C-O pattern.

Details on the X-ray refinement of structures 1 and 3

The dichloromethane molecule in **2** was found disordered in two positions with equal occupancy factors. In **3**, the dichloromethane molecule was found disordered by symmetry over two positions around the symmetry centre. This molecule was refined with constrained anisotropic parameters.

Variation of the magnetic susceptibility of 3 as a function of the temperature

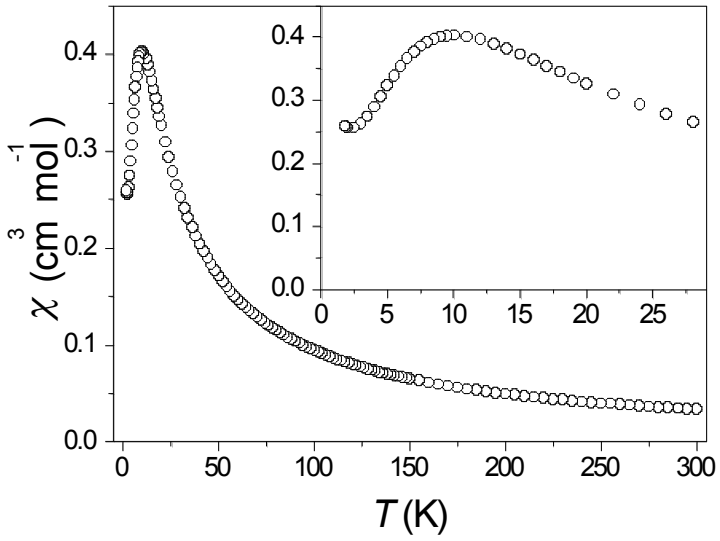

Figure S-11: Plot of χ vs. temperature of **3.** The inset shows a magnified view of χ at low temperatures.

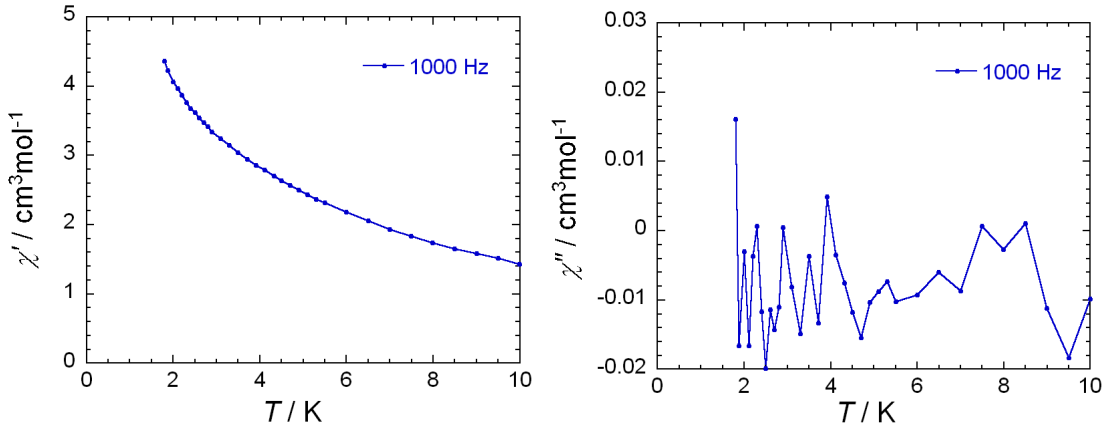

Figure S-12. Plots of the in-phase (χ', left) and out-of-phase (χ'', right) ac susceptibility signals vs temperature for complex **1** under 1000 Hz in the absence of dc field.

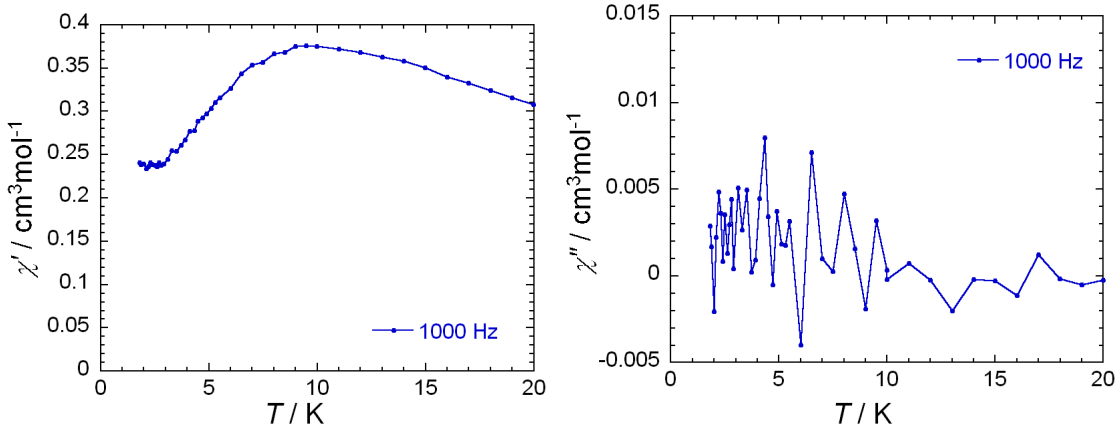

Figure S-13. Plots of the in-phase (χ', left) and out-of-phase (χ'', right) ac susceptibility signals vs temperature for complex **3** under 1000 Hz in the absence of dc field.