## **Supporting Information**

## Supramolecular 2D/3D Isomerism in a Compound Containing Heterometallic Cu<sup>II</sup><sub>2</sub>Co<sup>II</sup> Nodes and Dicynamide Bridges

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Figure S1. UV-Vis spectra of 1, 2a and 2b in acetonitrile solution; (a) d-d transition bands and (b) charge transfer bands



Figure S2. Solid state UV-Vis spectra of both the isomers 2a and 2b



Figure S3. Isothermal magnetization at 2 K of sample 1



Figure S4. Isothermal magnetization at 2 K of samples 2a and 2b

## Powder X-ray data for compounds 1, 2a and 2b

The experimental powder X-ray diffractograms (PXRD) of compounds **1**, **2a** and **2b** (Figures S5-S7, respectively) show a perfect agreement with the simulated ones from the single crystal structures, confirming that the samples contain a pure single phase. This result suggest that the small bump observed in the magnetic properties at low temperatures arises from a ferromagnetic impurity which is present is a very low percentage (below ca. 5 %) and cannot be detected by PXRD.



Figure S5. Experimental and simulated powder X-ray diffractograms for compound 1



Figure S6. Experimental and simulated powder X-ray diffractograms for compound 2a



Figure S7. Experimental and simulated powder X-ray diffractograms for compound 2b