

Electronic Supplementary Information

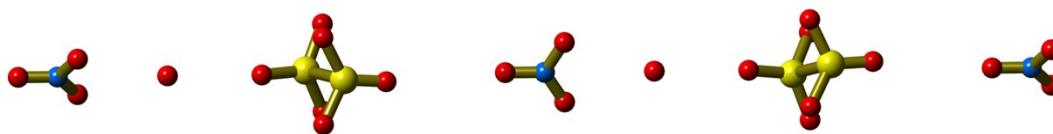
Templation of a square grid copper(II) 4,4'-bipyridine network by a 3D PtS-related Cu(I)-Cu(II) 4,4'-bipyridine crystal

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Contents

1. Channel contents in
 - i) $[\text{Cu}_2(4,4'\text{bipy})_4](\text{NO}_3)(\text{S}_2\text{O}_6)\cdot\text{H}_2\text{O}$ (orange crystals)
 - ii) $[\text{Cu}(4,4'\text{bipy})_2](\text{S}_2\text{O}_6)$ (blue crystals)
2. Calculated and experimental powder diffraction patterns for
 - iii) $[\text{Cu}_2(4,4'\text{bipy})_4](\text{NO}_3)(\text{S}_2\text{O}_6)\cdot\text{H}_2\text{O}$ (orange crystals)
 - iv) $[\text{Cu}(4,4'\text{bipy})_2](\text{S}_2\text{O}_6)$ (blue crystals)
3. Microscope photographs of orange-blue composite figures.

a)



b)

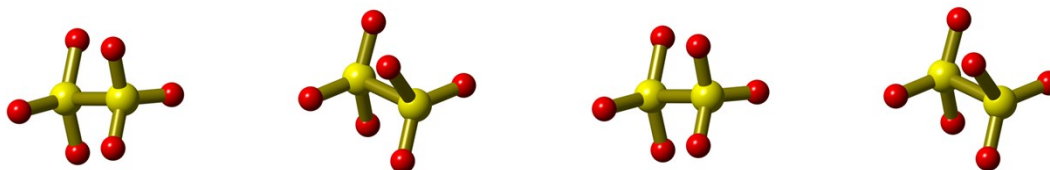


Figure S1. Channel contents in a) $[\text{Cu}_2(4,4'\text{bipy})_4](\text{NO}_3)(\text{S}_2\text{O}_6) \cdot \text{H}_2\text{O}$ (orange crystals) and b) $[\text{Cu}(4,4'\text{bipy})_2](\text{S}_2\text{O}_6)$ (blue crystals). The anions are disordered around 4-fold axes that run along the length of the channels. Colour code: S yellow, O red, N blue; H atoms have been omitted for clarity.

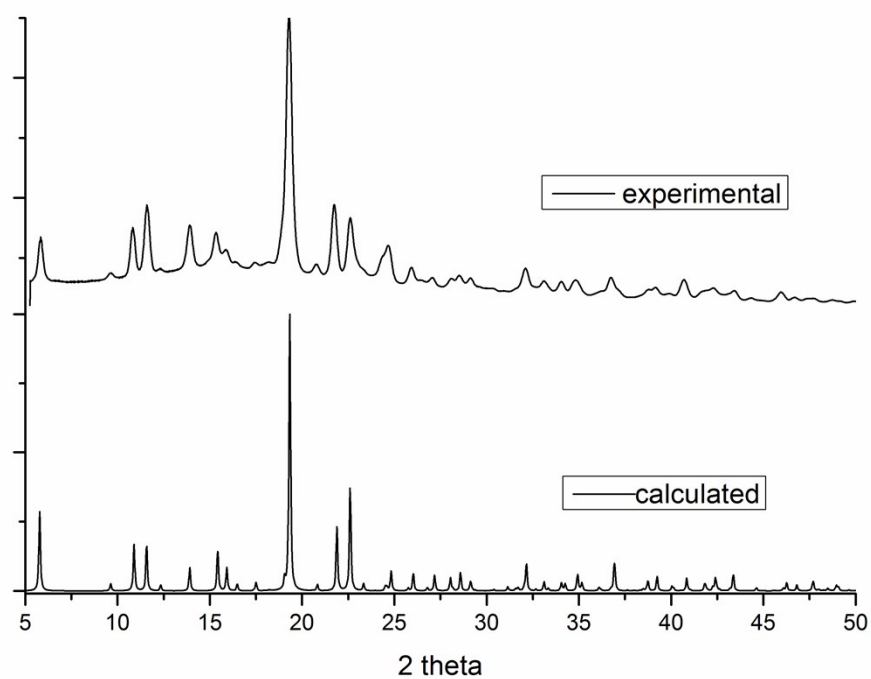


Figure S2. Experimental and calculated powder diffraction patterns for $[\text{Cu}_2(4,4'\text{bipy})_4](\text{NO}_3)(\text{S}_2\text{O}_6) \cdot \text{H}_2\text{O}$ (orange crystals)

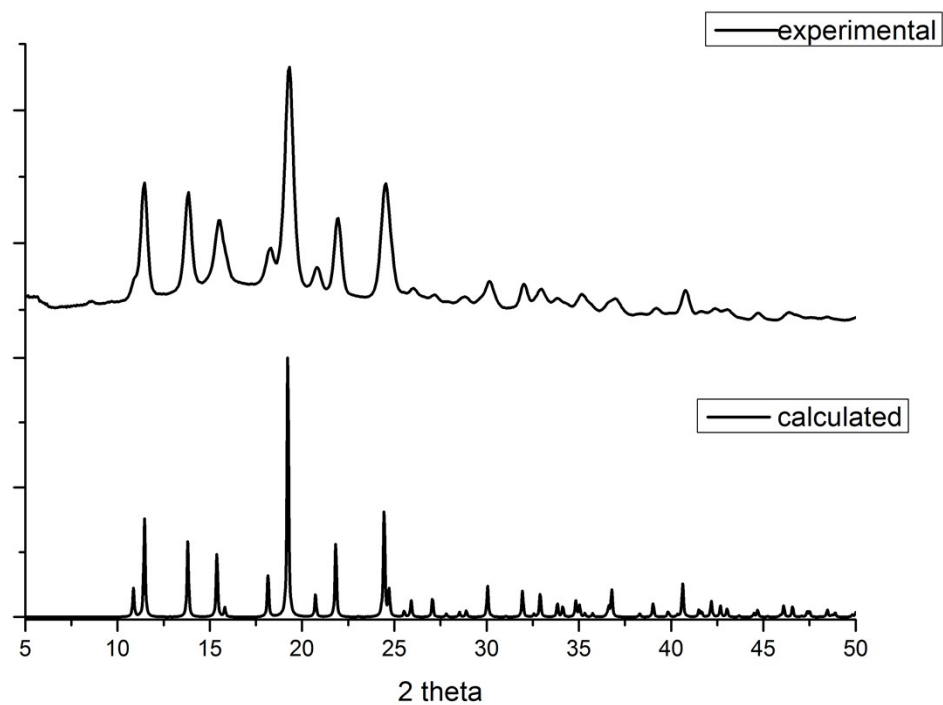


Figure S3. Experimental and calculated powder diffraction patterns for $[\text{Cu}(4,4'\text{bipy})_2](\text{S}_2\text{O}_6)$ (blue crystals)

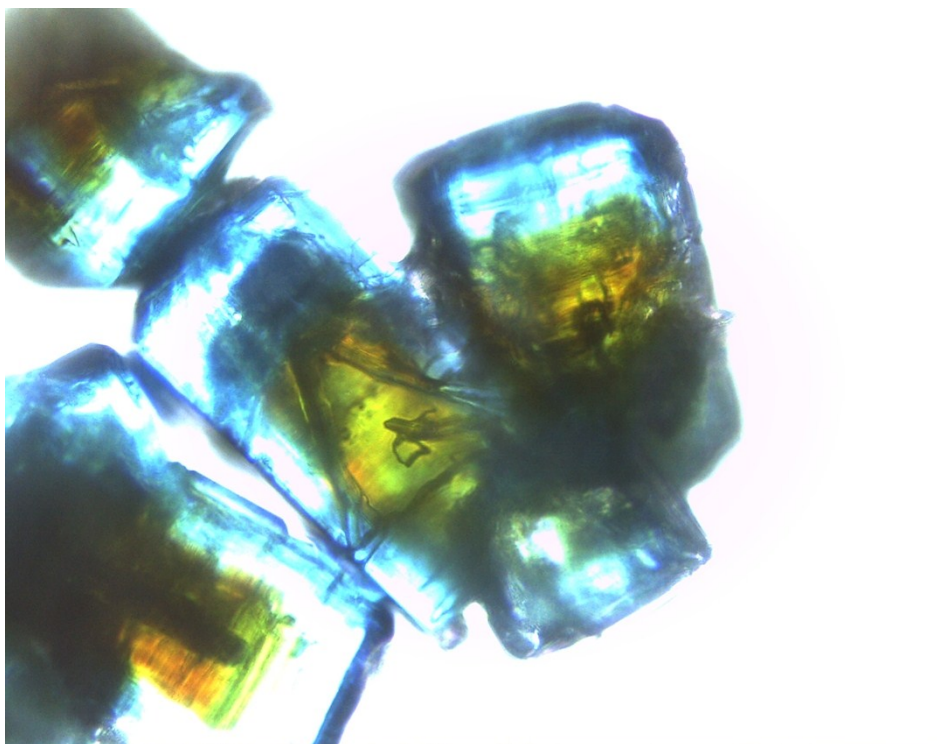


Figure S4. Microscope photograph of the $[\text{Cu}_2(4,4'\text{bipy})_4](\text{NO}_3)(\text{S}_2\text{O}_6)\cdot\text{H}_2\text{O}$ (orange crystals) and $\text{Cu}(4,4'\text{bipy})_2(\text{S}_2\text{O}_6)$ (blue crystals) composite crystals