

## Poster Presentation

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### *Magneto-structural relationships in Cu(II) containing hybrid materials*

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The combination of inorganic Cu(II) halides with organic amine moieties within a single hybrid material allows for the combination of the properties of both components in a single material. Cu(II) ions may afford magnetic properties to such a hybrid material, while the organic component can be employed to template the structure and to shield the magnetic ions, thereby controlling the magnetic dimensionality of the structure. In this investigation, structural characterisation by single crystal X-ray diffraction and magnetic susceptibility measurements employing SQUID magnetometry, allows for the identification of magneto-structural relationships in the materials. Examples highlighting the magneto-structural properties in these Cu(II) containing hybrid materials will be presented. The effect of changes in organic component or anion on the structural characteristics will be analysed using the principles of crystal engineering, while the magnetic data is fitted to suitable quantum mechanical models to allow for the identification of magnetic exchange pathways and -parameters. It will be shown how computational techniques may assist in the interpretation of the magnetic data.

**Keywords:** magneto-structural relationships