

Poster Presentation

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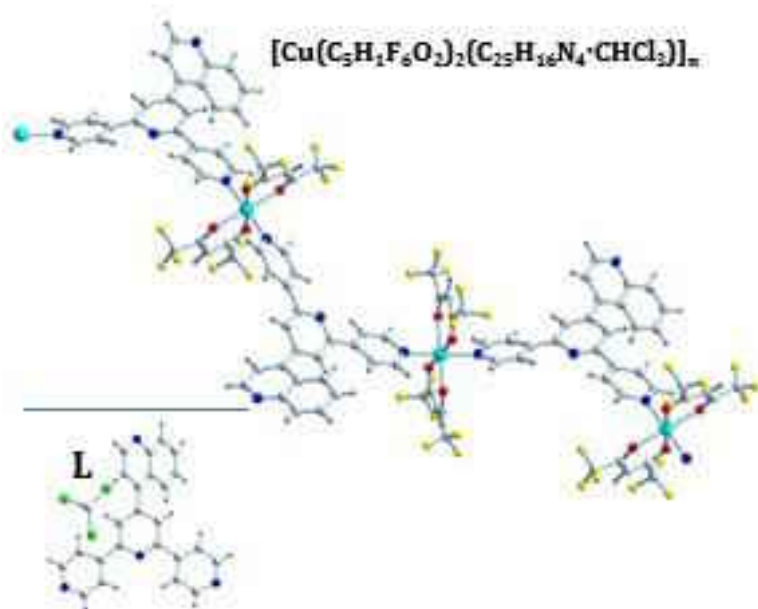
New terpyridine-(β -diketonate)-copper(II) complex. Structure and magnetism

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Over the last decade the design and synthesis of metal-organic compounds with fascinating structural properties and potential applications as functional materials has been a major challenge in various fields of research.¹ Strategies for preparing these compounds are based on the careful selection of the constituent building blocks. 4'-(substituted)-4,2':6',4''-terpyridine ligands are considered versatile building blocks for the assembly of coordination polymers and networks with useful solid-state properties, such as magnetism, luminescence, redox activity, etc.² The divergent arrangements of N-donor atoms and the attachment of aryl substituents into the 4'-position of 4,2':6',4''-terpyridine allow to bridge two or more metal centers, giving rise to molecular assemblies of 1, 2 or 3 dimensions.³ Our line of interest is the obtainment of compounds with emergent magnetic properties. Herein we present a copper complex surveying the new 4'-(quinolin-4-yl)-4,2':6',4''-terpyridine ligand (L), and formulated as $[\text{Cu}(\text{C}_5\text{H}_7\text{F}_6\text{O}_2)_2(\text{C}_{25}\text{H}_{16}\text{N}_4\cdot\text{CHCl}_3)]_n$ which was produced from the reaction of two equivalents of L with $\text{Cu}(\text{hfac})_2$, (hfac=hexafluoroacetylacetonate). The copper ion in $\text{trans-}\{\text{CuN}_2(\text{hfac})_2\}$ has an octahedral environment. The nitrogen atoms of the terminal pyridine rings coordinate to the paramagnetic centres, while the central ring remains uncoordinated. The linkage of the resulting polyhedra gives rise to an undulating 1D polymeric structure. Within these chains there are two main non-covalent interactions: π -stacking between the quinoline substituents and the pyridine rings and $\text{CH}\cdots\text{F}$ interactions due to CF_3 group of the hfac ligand. There are also weak $\text{CH}\cdots\text{N}$, $\text{CH}\cdots\pi$ and π - π intermolecular interactions linking the L and CHCl_3 groups, which give stability to the crystal structure. Finally, we performed magnetic measurements, in order to determine the magnetic behaviour of our system. Acknowledgments: FONDECYT 1130433 project, CIPA of University of Concepción, LIA-MIF 836

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