

MS31-P04 | PROBING SPIN CROSSOVER IN NOVEL METAL ORGANIC COMPLEXES

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Spin Crossover is a phenomenon in which metals d^4-d^7 can undergo electronic spin transitions between high and low spin states under the influence of external stimuli such as temperature pressure and light[1]. These systems have the potential to be used as molecular switches which leads to the requirements for room temperature thermal hysteresis.

In the work presented a library of 1,2,4-triazole ligands based on abpt (4-amino-1,2,4-triazole-3,5-bipyridyl) with various electron withdrawing and donating properties has been produced and complexed [2]. Using a sequence of metals, solvents and counter ions to expand the variety of complexes available to test changes across similar systems and the effect they have on any transition energies.

Multiple metal complexes have been produced and the structures via single crystal crystallography under differing conditions to probe for the spin transition phenomena.

Another serendipitous discovery from this work includes an unprecedented room temperature ligand migration for one of the triazole systems in the presence of iron(II) bis-isothiocyanate [3]. This system produced multiple solvates that were shown to display solvato-chromism [4].

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