Structure and Synthesis of Four Supramolecular Structures Involving Cu(I) and 4,7-Phenanthroline

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Abstract

The design and synthesis of supramolecular species with discrete geometric shapes has been an area of much interest and research in recent years. Three isolated species of square shaped molecules and one infinite network of covalently bonded squares are presented. The four structures are all obtained from $[Cu(MeCN)_4]BF_4$ and 4,7-phenanthroline, with differences in the ratio of starting material, solvents, and set ups of these materials resulting in the differences in structure. Synthesis conditions, crystal data, comparisons, and pictures of the structures are all included.