

ANION AND SOLVENT INFLUENCES ON THE SELF-ASSEMBLY OF COPPER(I) COORDINATION SOLIDS

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ABSTRACT

The investigation of solvent and anion influences on the self-assembly of copper(I) coordination solids are presented. As these extended solids vary in structural design as reactions conditions are varied, both those particular structural variances and the reaction conditions involved will be discussed.

This presentation will be divided into four major sections. The first section covers an in-depth look at those structural variances found among the copper(I) coordination solids synthesized using 4,4'-bipyridine with refined synthesis and related structures. This entire system is thoroughly examined in order to identify all possible structural variances resulting from the implementation of a specific set of reaction variables, specifically the identity of both anion and reaction solvent used.

The second and third parts will look closer at the self-assembly reaction mechanism as synthetic intermediate structures are presented and analyzed in relation to the above-mentioned structures. Each structure presented offers information in regards to the role the anion or solvent play in the self-assembly reactions

The final section deals with similar reactions using the pyrimidine ligand. Several structures presented here suggests that anion templation plays a major role in the extended solids formation. This section concludes with a practical application of these materials as a study of selective anion exchange with a large cavity Cu(I) coordination solid is presented.