

Anion controlled geometrically different Cu(II) based coordination polymers

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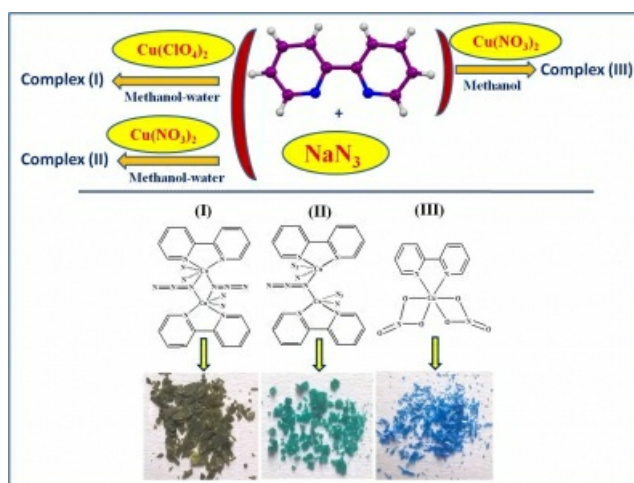
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The coordination complexes with rigid aromatic ligands are useful in growing areas of catalysis, material science and pharmaceuticals. 1-2 The azide ligands³ with Cu(II) ions have attracted much attention because of their diversified modes in the structure and predictability. Azides are suitable as bridging ligands exhibiting versatile binding modes with metal centre and responsible for extension in dimensionality like thiosemicarbazide. In the absence of azide group, metal-rigid ligand systems can acquire low dimensionalities with limited properties. The Cu-azide systems along with rigid spacers are useful in attracting field of material science, magnetism and catalysis etc.¹ In the polymeric complexes, strong and weak intermolecular interactions are present which provide stability and H-bonded supramolecular network in solid state. The intermolecular interactions in these type of metal complexes can be analyzed by using Hirshfeld surface tools and represents a major advance in the crystal structure prediction and multidimensional molecular structure formation. In the present work, Cu(II) ion based complexes have been synthesized under normal environmental conditions with rigid and aromatic ligands (Fig 1). Rigid azide group is responsible for the formation of 1D extended structures and monomeric complex is formed due to lack of bridging group like -N₃ resulting limitation in dimensionality. Thermal stability of 1D complexes is comparatively higher than monomeric complex.

References

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