

Poster Presentations

[MS37-P06] Crystallographic Study of New Cu(I) Complexes with Unsymmetrical Tetraazaphenanthrene Ligands.

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There has been much interest over the past two decades in emissive coordination complexes of the transition metal elements with a focus on their applications as photosensitizers in solar-energy conversion and in display devices. [1-3] In this regard, first row transition metal complexes are potentially useful, being considered inexpensive, being less toxic, displaying a greater ease of synthesis, and are more abundant when compared to the third-row noble metal complexes. In particular, copper(I) diimine complexes have been considered as potential substitutes for ruthenium(II) and osmium(II) systems. Owing to the significant similarities in absorption spectra and photophysical behavior there have been recent attempt to replace Ru(II) with Cu(I) diimine complexes in dye-sensitized solar cells (DSSCs). [4-5] To date, there are only a few publications about the synthesis, spectroscopic characterization and properties of Cu(I)tetraazaphenanthrene ligands. [6-7] In order to exploit important structural parameters of the Cu(I)-tetraazaphenanthrene complexes which are important for their photochemical and photophysical behaviors in the solid state and solution phase, we now report the crystal structure of three new copper(I) complexes of the unsymmetrical 2,3,6,7substituted-1,4,5,8-tetra-azaphenanthrene ligands. To the best of our knowledge, this is the first report on synthesis, characterization, crystal structure, and computational studies of unsymmetrical tetra-azaphenanthrene Cu(I) complexes. [89]

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