

ABSTRACT

This study furnishes information for the synthesis of copper metal complexes with a 4,4-oxydianiline ligand. The reflux approach was predominantly exploited, and the influence of various parameters like solvent, pH, and molar ratio was scrutinized. The two complexes of copper with the co-ligand's sodium oxalate and cinnamic acid were fabricated, while the 4,4-oxydialine ligand was the same in both complexes. The UV-Vis, FTIR, photoluminescence analysis, and melting point examination were performed to ensure the formation of complexes. UV-Vis analysis provides information about the lambda maximums of complex 1 and complex 2, at 354nm and 234 nm, respectively, while the lambda maximum of ligand was 300 nm. The FTIR spectra of both complexes also revealed metal-ligand bonds in the region 500–700 cm^{-1} and the peaks of functionalities of co-ligands displayed their binding within complexes. The photoluminescence assessment revealed that both complexes, being potent chemosensors for picric acid (complex 1) and 4-nitrophenol (complex 2), have influential uses.