

ABSTRACT

In this research work composites of cadmium using salts (cadmium nitrate tetrahydrate and monohydrate cadmium chloride), ligand (1,2,3,4-cyclopentane tetracarboxylic acid) and co-ligands (Sodium azide and Indole-3-Acetic acid) namely Complex1 and complex2 were synthesized utilizing solvents distilled water, tetrahydrofuran, and N,N-Dimethyl formamide through green synthesis. Encapsulation of metal (in this case nickel metal) was done and justified analytically. Different characterization techniques like melting point, FTIR spectroscopy, UV-VIS spectroscopy and Fluorescence spectroscopy were used to study the structural properties and fluorescence applications, which ensures the encapsulation of metals in specific porous structure. Encapsulated fluorescent MOF composites can be used for sensing of metal ions and nitrogenous compounds.