

ABSTRACT

Pyridine 2,6-dicarboxylic acid and pyridine 2,4,6-tricarboxylic acid were used as ligands for synthesizing high nuclearity metal ligand clusters. The co-ligands which were studied include 2,2'-bipyridine, 4,4'-bipyridine and sodium azide. The metal complexes were prepared by taking ligand and metal salt in 1:2 w/w ratio in different solvents and under various reaction conditions. $\text{Na}_2(\text{pydc})_2 \cdot 3\text{H}_2\text{O}$, $\text{Nd}_2(\text{pydc})_2 \cdot 4\text{H}_2\text{O}$, $\text{Na}_3\text{Nd}(\text{pydc})_3 \cdot 8\text{H}_2\text{O}$ and $\text{Co}(\text{Pytc}) \cdot 10\text{H}_2\text{O}$ were synthesized by refluxing solution of pyridine carboxylic acids, metal salts and co-ligands (2:1:2 w/w) in mixture of water and methanol. $\text{Cu}(\text{pydc})_2(\text{bipy})_2 \cdot 4\text{H}_2\text{O}$ and $\text{Cu}(\text{pydc})_2(\text{bipy})_2 \cdot \text{H}_2\text{O}$ were synthesized under hydrothermal conditions. These complexes were characterized by analytical techniques such as Single Crystal X-ray Crystallography, FTIR and Elemental Analysis.