

## **ABSTRACT**

Pyridine-2,4,6-tricarboxylic acid is an ambidentate and polydentate ligand. It is a rich oxygen and nitrogen donor ligand which has been used to make one, two and three dimensional metal organic frameworks with different transition metals and lanthanides. It has different binding modes depending upon the metal geometry. The ligand contains the carboxylate groups which help in making thermally stable and structurally diverse metal organic frameworks. Carboxylate groups also help in charge balance of the central metal atom. Keeping in mind these properties of pyridine-2,4,6-tricarboxylic acid, efforts result in metal complexes of Mn, Cu and Dy. These complexes were synthesized in water at room temperature and by heating under reflux in a 25.0 ml capacity round bottom flask. Their XRD and FT-IR studies were carried out. Mn complex was a twin structure, Cu complex had some identical geometry to its first reported structures, whereas that of Dy had incorporated oxalate ion as a co-ligand from unknown source. A new Cr salt was also formed in effort to get its complex with pyridine-2,4,6-tricarboxylic acid.