Synthesis and Crystal Structure of bis(3,3′,5,5′-tetramethyl benzidinium) bis(pyridine-2,6-dicarboxylato) nickelate(II) monohydrate

J. Soleimannejad1, S. Sedghiniya1, M. Nasibipour2

1- School of Chemistry, College of Science, University of Tehran, P.O. Box 14155-6455, Tehran, Iran
2- Department of Chemistry, College of Science, University of Shiraz, P.O. Box 71454, Shiraz, Iran

Abstract: The compound of (Htmb)2[Ni(pydc)2].H2O (I) (In that tmb and pydc are 3,3′,5,5′-tetramethyl benzidine and pyridine-2,6-dicarboxylic acid, respectively) was synthesized via the proton transfer method and the structure was determined by single crystal X-ray diffraction. This compound crystallized in monoclinic crystal system and C2/c space group. In the asymmetry unit of compound 1, there are half molecule of the [Ni(pydc)2]2- anionic complex, one protonated molecule of 3,3′,5,5′-tetramethyl benzidine as a counter ion and half of an uncoordinated water molecule. Extensive intermolecular N-H…O and O-H…N, hydrogen bonds along with π…π and C-H…π interactions contribute in self-assembly and formation of a novel supramolecular structure.

Keywords: Proton transfer compounds, pyridine-2,6-dicarboxylic acid, 3,3′,5,5′-tetramethyl benzidine, crystallography, crystal structure.