

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

J. Soleimannejad^{*1}, 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

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Abstract: The compound of $(\text{Htmb})_2[\text{Ni}(\text{pydc})_2] \cdot \text{H}_2\text{O}$ (**1**) (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 crystalized in monoclinic crystal system and $C2/c$ space group. In the asymmetry unit of compound **1**, there are half molecule of the $[\text{Ni}(\text{pydc})_2]^{2-}$ 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 $\pi \dots \pi$ 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.

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^{*}Corresponding author, Tel: 021-66495291, Fax: 021-66972074, Email: Janet_Soleimannejad@khayam.ut.ac.ir