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

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Abstract: The compound of $(Htmb)_2[Ni(pydc)_2)].H_2O$ (**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 $[Ni(pydc)_2)]^{2-}$ 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.*

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