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Growth, structure and spectroscopic studies of an organic optical material: 4-Aminopyridinium 4-nitrophenolate 4-nitrophenol single crystal

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Organic nonlinear optical (NLO) crystals play an important role in optical device fabrication. The use of *p*-nitro phenol for the production of crystalline salt with aromatic base is of considerable interest for the nonlinear optical applications. Single crystals of 4-aminopyridinium 4-nitrophenolate 4-nitrophenol (4AP4NP) were grown by the slow evaporation solution growth technique. The obtained crystals were characterized by single crystal X-ray diffraction analysis, FT-IR and FT-Raman spectral studies. The unit cell parameters and space group of 4AP4NP crystal were estimated by single crystal X-ray diffraction analysis. The presence of functional groups and their corresponding vibrations were studied through FT-IR analysis. The chemical components present in the crystal were further confirmed by FT-Raman spectroscopy.

Keywords: Single crystal, solution growth, FT-IR, FT-Raman.