

P-NITROANILINIUM 4-METHYL PHENOLATE SINGLE CRYSTALS:SYNTHESIS, GROWTH, CHARACTERIZATION AND ITS APPLICATIONS

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ABSTRACT:

P-nitroanilinium 4-methyl phenolate (PNAMP), a nonlinear optical material was synthesized and crystals were grown from the deionized water solvent by slow evaporation solution growth method. The lattice parameters and crystal system of the crystal grown were confirmed by Single Crystal X-ray diffraction analysis. It crystallizes in monoclinic crystal system with space group of P1. The FTIR spectral analysis done to confirm the presence of functional group present in the grown crystals UV–vis-NIR spectral study was performed to analyze optical transparency of PNAMP crystal and found that the grown crystal has sufficient transparency in the entire visible region with lower cut-off wavelength of 375 nm. The second harmonic generation test has been confirmed by the Kurtz powder test.

Keywords: Single crystal, FT-IR, UV- visible-NIR, band gap, non linear optical material, antimicrobial property.