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Synthesis,growth and characterization of P-nitroaniliniumsulfanilate Single crystals

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ABSTRACT:

P-nitroaniliniumsulfanilate (PNASA), a novel nonlinear optical material was synthesized and crystals were grown from the ethanol 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 analyse optical transparency of PNASA crystal and found that the grown crystal has sufficient transparency in the entire visible region with lower cut-off wavelength 0f 354 nm. The second harmonic generation test has been confirmed by the Kurtz powder test.

Keywords: *SXRD, FT-IR, NMR, UV- visible-NIR, band gap, electro-optic material, second harmonic generation.*