

curve. The second harmonic generation was confirmed by Kurtz powder method and it is found to be 3 times than that of KDP crystal.

INVESTIGATION ON NOVEL BULK SIZE SINGLE CRYSTAL OF GLYCINE WITH METAL IONS GROWN BY SOLUTION GROWTH METHOD FOR PHOTONIC APPLICATIONS

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Single crystals of Glycine Potassium dichromate (GPDC) were successfully grown by slow evaporation method at an ambient temperature. Single crystal X-Ray diffractometer was utilized to measure the lattice parameters and to confirm the crystal system. The functional groups present in the grown GPDC crystal have been identified by the FTIR spectral analysis. The optical absorption studies were carried out so as to confirm the lower cut off wavelength of the grown crystal which has been analyzed by making use of UV-Vis spectrum. The mechanical hardness of the sample has been studied. The existence of second harmonic generation signals was observed using Nd:YAG laser with fundamental wavelength of 1064 nm possessing SHG efficiency of 1.3 times greater than that of KDP and hence it can be a potential material for the frequency- doubling process.

INVESTIGATION ON SINGLE CRYSTAL BY TARTARIC ACID-BARIUM CHLORIDE: GROWTH AND CHARACTERIZATION OF NOVEL NLO MATERIALS

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The progress of single crystal followed by C₄H₆O₆ (tartaric acid) and BaCl₂ (barium chloride) (TABC; third-order nonlinear optics semi-organic) was synthesized with slow evaporation method using distilled water at room temperature. TABC single crystal was introduced into various characterizations like X-ray diffraction to determine inter atomic cell parameter values. The samples are crystalline structure of monoclinic, which have space group of P₂. The functional groups of the current material are identified using FT-IR spectrum. Optical parameters like transparency, energy bandgap and Urbach energy have been determined using UV-vis-NIR spectrum. The thermal stability of the material was investigated by differential scanning calorimeter analysis. The mechanical property was studied using Vickers microhardness test. The surface morphology of the material was determined by scanning electron microscope technique. The change in dielectric behaviour of TABC with respect to the function of frequency at various temperatures has