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Crystal engineering, structural and optical properties of 2-aminopyridinium diphenylacetate diphenylacetic acid crystal

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Abstract

Organic crystal of 2-aminopyridinium diphenylacetate diphenylaetic acid with dimensions 22 x 13 x 11 mm^3 was grown by slow cooling technique. The structural confirmation has been done using single crystal X-ray diffraction study. The title compound crystallizes in the monoclinic crystal system with noncentrosymmetric space group $P2_1$. The C-H-O, N-H-O type of packing for the title compound has been reported. Optical transmittance shows a wide transparency in the visible region with lower cutoff wavelength at 349 nm. The four independent tensor coefficients of dielectric permittivity were found to be ε_{11} = 12.16, ε_{22} = 10.68, ε_{33} = 11.90 and ε_{13} = -4.24 from the dielectric measurements. The thermal stability of the 2APD compound was found to be 128˚C assessed by TG-DTA analyses. The particle size SHG of the 2APD reveals that it is a phase-matchable NLO crystal.

A1. Crystal structure, Crystal Morphology, A2. Phase matching behavior.