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### Crystal growth and characterization of phthalate based single crystals

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**Abstract :** We discuss the growth of two different phthalate based crystals such as potassium acid phthalate (KAP) and sodium acid phthalate (NaAP) by slow evaporation solution growth technique. We compare the physical properties of these crystals using several experimental techniques. The single crystal X-ray diffraction is used to find out the formation and type of crystalline structures of KAP and NaAP crystals. Based on the results of Fourier transform infrared spectroscopy, functional groups present in the crystals have been identified. Microhardness measurements on these crystals are used to evaluate the strength of the crystals. Thermal stability of the crystals is judged from the thermo gravimetric and differential thermal analyses.

**Key words :** Sodium acid phthalate; Single crystals; Optical transmittance; Microhardness; Thermal stability; Melting point.

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