**CRYSTAL GROWTH, STRUCTURE AND CHARACTERIZATIONS OF AN ORGANIC OPTICAL MATERIAL L–LEUCINIUM HYDROGEN MALEATE (LLHM) SINGLE CRYSTAL**

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**ABSTRACT**

An organic crystal of L-leucinium hydrogen maleate has been successfully grown by slow evaporation methods. The synthesized crystal is a monoclinic system with non-centrosymmetric space group C2, according to X-ray diffraction analysis of a single crystal. The presence of functional groups were confirmed by FTIR analysis. A transmission spectrum reveals that the crystal has low UV cutoff of 250 nm and has a good transmittance in the entire visible region thereby confirming the enhancement of NLO property. The thermal stability of the crystal has been investigated by using thermogravimetric analysis (TG) and differential thermal analysis (DTA). The emission intensity is visible in the fluorescence spectrum, indicating greenemission.

**Keywords**: Crystal growth, SXRD, optical transmission and thermal analysis