

## Accepted Manuscript

Title: Growth by free evaporation method and physico – chemical properties of calcium succinate single crystals

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PII: S0030-4026(17)30890-2  
DOI: <http://dx.doi.org/doi:10.1016/j.ijleo.2017.07.065>  
Reference: IJLEO 59461

To appear in:

Received date: 27-4-2016  
Revised date: 28-7-2017  
Accepted date: 30-7-2017

Please cite this article as: D.S.Christy, C.K.Mahadevan, X.Sahaya Shajan, Growth by free evaporation method and physico – chemical properties of calcium succinate single crystals, *Optik - International Journal for Light and Electron Optics* <http://dx.doi.org/10.1016/j.ijleo.2017.07.065>

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## **Growth by free evaporation method and physico - chemical properties of calcium succinate single crystals**

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### **Abstract**

Calcium succinate single crystals were grown by adopting the free evaporation method for the first time and characterized. Powder X-ray diffraction, FTIR spectral and thermogravimetric measurements were carried out to characterize the grown crystals structurally, chemically and thermally. Optical characterization has been done by UV – Vis – NIR spectral and second harmonic generation efficiency measurements. Microhardness and dielectric measurements were carried out to characterize mechanically and electrically. The results obtained indicate that the grown crystals exhibit good crystallinity, triclinic lattice structure, reasonable thermal stability (up to 68 °C), good transmittance (in the wavelength range from 240 – 1200 nm), second harmonic generation, mechanical softness and normal dielectric behavior.

**Keywords:** Crystal growth, Powder X-ray diffraction, Thermal analysis, NLO material, Microhardness, Dielectric properties.

### **1. Introduction**

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