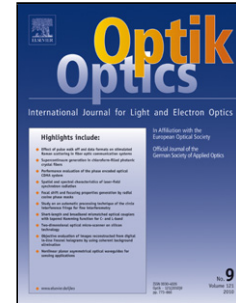


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# Growth and Characterization of Glycinium oxalate crystals in Ethanol and Methanol

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## Abstract

Glycinium oxalate single crystals were grown from aqueous solution by make use of slow evaporation technique in laboratory. The suitable growth conditions were adopted to produce good quality crystals in micro dimensions. The grown crystals were characterized by X-ray diffraction, FT-IR and UV-Vis transmittance spectrum analyses.

**Keywords:** Growth from Solution; X-ray diffraction; Optical studies.

## 1. Introduction

A remarkable revolution in the field of solid state physics has made by growing good quality crystals with desired physical and chemical properties among the researchers. Nonlinear optical (NLO) materials have been of a special interest in industrial applications. The materials of this kind show an important impact on laser technology, optical communications and optical data storage [1-3]. The study of amino acids and their complexes with inorganic salts have gained lot of importance [4]. Organic NLO materials play vital role in second-harmonic generation (SHG), frequency mixing, electro-optic modulation, optical peremetric oscillation, optical bi-stability, optical image processing, colour displays, underwater communications and medical diagnostics etc.[5]. Amino acids are important organic materials for NLO application because the cation donor carboxylic acid (COOH) group and proton acceptor amino group [6]. These are called zwitterons and form hydrogen bonds. These hydrogen bonds create non-centro symmetric structures, which is a requisite for effective NLO properties [7]. Glycine (NH<sub>2</sub>-CH<sub>2</sub>-COOH) is a simplest amino acid and it forms number of complexes with various inorganic salts [8]. Glycine is the only amino acid without a centre of chirality and has a high melting point due

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