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Effect of Rochelle salt on Growth, Optical, Photoluminescence, Photoconductive and piezoelectric Properties of the Triglycine Sulphate Single Crystal

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**Effect of Rochelle salt on Growth, Optical, Photoluminescence,
Photoconductive and piezoelectric Properties of the Triglycine Sulphate
Single Crystal.**

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Abstract

Triglycine sulphate (TGS) is well-known ferroelectric crystal, finding many applications in IR detectors and laser devices. Triglycine sulphate crystal was grown by conventional method using water as a solvent. The 1 mol % of semiorganic piezoelectric material Rochelle salt (RS) is added into the pure TGS to enhance its optical, photoluminescence and piezoelectric properties. The crystallinity of the grown crystals was examined by powder X-ray diffraction analysis. Optical transmittance shows that the RS doped TGS possesses higher transparency compared to pure TGS. High intense luminescence at 442 nm for the RS doped TGS single crystal is observed from the photoluminescence study. The negative photoconductivity nature is observed for both pure and RS doped TGS and it was studied under different conditions such as dark, light and also under different temperatures such as at Curie temperature, above and below Curie temperature. Low dislocation density for RS doped TGS crystal is observed from

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