



An Investigation of Sem, Thermal And Mechanical Properties of Pure and Sodium Acetate Trihydrate Doped Thiourea Single Crystals

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Abstract:Single crystals of sodium acetatetrihydrate doped thiourea (abbreviated as STATH) $\text{NaC}_3\text{H}_3\text{N}_2\text{SO}_5$ and pure thiourea (abbreviated as TU) $\text{CH}_4\text{N}_2\text{S}$ were successfully grown by slow evaporation method at room temperature from their aqueous solutions. The harvested crystals were of average dimensions $19 \times 18 \times 5 \text{ mm}^3$ (TU) and $38 \times 21 \times 23 \text{ mm}^3$ (STATH).Surface morphology of TU and STATH was studied by scanning electron microscope (SEM). The thermo gravimetric analysis (TG) and Differential Scanning Calorimetry (DSC) analysis were employed to understand the thermal decomposition and mass loss of the synthesized compounds.The micro hardness test reveals that both the crystals possess good mechanical strength.

Keywords:Crystal growth, SEM, TG/DTA and Hardness.

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