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Thermal, Optical, and Spectroscopic studies of gel grown Strontium magnesium oxalate crystals

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Abstract : The Thermal, Optical and Spectroscopic studies of Strontium Magnesium Oxalate (SrMgO) crystals were discussed in the present paper. The crystals were grown by silica hydro gel technique. Grown crystals were optimized by different growth parameters. Crystals were examined under various characterizations. The cations present in the crystals Sr²⁺, Mg²⁺, C and O identified by Energy Dispersive X-Ray Analysis and confirms the percentage of composed elements. Field Emission Scanning Electron Microscope reveals surface morphology. Thermal studies of grown crystals were carried out by Thermo Gravimetric Analysis, DSC and DTG. The functional groups were identified by employing Fourier Transmission Infrared spectrometer and Raman spectrometer. Absorption coefficient, Band gap energy, Refractive index and electrical susceptibility were computed by UV-Visible spectrum of the crystals. Internal arrangements of atoms in the grown crystals were investigated by X-Ray Diffraction technique.

Keywords : Silica hydrogel, TGA/DSC/DTG, UV-Visible spectrometer and X-Ray diffraction technique.

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