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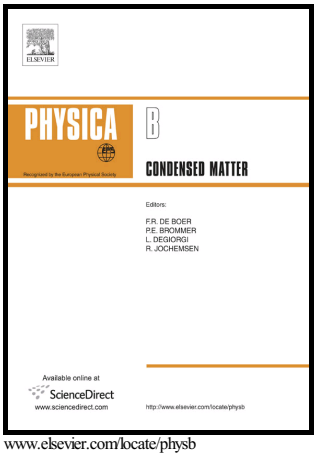

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Abstract

Strontium cyanurate crystals with novel structure and unique optical property like mechanoluminescence have been grown by conventional gel method. Transparent crystals were obtained. The single crystal X-ray diffraction analysis reveals the exquisite structure of the grown crystal. The crystal is centrosymmetric and has a three dimensional polymeric structure. The powder X ray diffraction analysis confirms its crystalline nature. The functional groups present in the crystal were identified by Fourier transform infrared spectroscopy. Elemental analysis confirmed the composition of the complex. A study of thermal properties was done by thermo gravimetric analysis and differential thermal analysis. The optical properties like band gap, refractive index and extinction coefficient were evaluated from the UV visible spectral analysis. The etching study was done to reveal the dislocations in the crystal which in turn explains mechanoluminescence emission. The mechanoluminescence property exhibited by the crystal makes it suitable for stress sensing applications. Besides being a centrosymmetric crystal, it also exhibits