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Optical and dielectric study of bis (thiourea) nickel barium chloride single crystals

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A new semiorganic nonlinear optical bis-thiourea nickel barium chloride was synthesized and crystals were grown by slow aqueous solvent evaporation technique. The transparent and colorless crystals having maximum dimensions of 13 mmx8 mmx2.2 mm were obtained. The powder XRD analysis suggested orthorhombic crystal structure with unit cell parameters as: $a=9.70 \text{ \AA}$, $b=10.68 \text{ \AA}$ and $c=17.95 \text{ \AA}$. The FTIR spectroscopy study confirmed the presence of various functional groups. The optical parameters were studied by UV-Vis spectroscopy. The dielectric study was carried out in the frequency range of applied field from 500 Hz to 1 MHz. The variations of dielectric constant, dielectric loss were studied with frequency. It was found that the dielectric constant and the dielectric loss decreased as the frequency of applied field increased. The results are discussed.

Biography

Rakesh R Hajiyani is pursuing PhD from Saurashtra University, Rajkot, Gujarat, India. He is the Scientific Assistant in Physics Division, Directorate of Forensic Science, Gandhinagar (Government of Gujarat). He has published 5 papers in reputed journals.

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