Non-centrosymmetric betaine-selenious acid crystal: vibrational, X-ray, calorimetric, and dielectric studies.

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Streszczenie

Piezoelectric crystal of betaine–selenious acid (abbreviated as B–H_2SeO_3) was studied at various temperatures by X-ray diffraction, differential scanning calorimetry, dielectric and vibrational spectroscopy methods. The latter was made by applying polarized techniques for the single crystal samples (Raman, infrared transmission and reflection spectra) and for the polycrystalline samples as well. B–H_2SeO_3 crystallizes in non-centrosymmetric space group (*Fdd*2) of orthorhombic system and does not reveal any phase transition. The high piezoelectric effect makes this crystal a candidate for nonlinear optical applications. Detailed analysis of the polarized vibrational spectra in relation to the B–H_2SeO_3 crystal structure is presented.

Słowa kluczowe

Betaine–selenious acid crystal, Piezoelectric effect, Polarized vibrational spectra, X-ray, DSC, Dielectric permittivity

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