Thermodynamic properties and molecular motions in ferroelectric $(C_3N_2H_5)_5Sb_2Br_{11}$.

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Streszczenie

The first precise measurements of specific heat changes have been performed for a ferroelectric crystal $(C_3N_2H_5)_5Sb_2Br_{11}$ by means of an ac calorimeter. The calorimetric measurements disclosed a quite uncommon type of heat anomaly close to the paraelectric–ferroelectric transition. The ferroelectric phase transition at about 145 K has been characterized and described by the Landau model using the specific heat data. Thermal parameters (such as the excess enthalpy (ΔH) and the excess entropy (ΔS) of the continuous ferroelectric phase transition have been estimated and discussed. ^{1}H spin–lattice relaxation at 90 MHz has been measured for this crystal in a very broad temperature range 90–420 K, covering three phase transitions. The relaxation data have been interpreted in terms of different dynamical properties of imidazolium cations put in structurally different environments.

Słowa kluczowe

ferroelectric, AC calorimetry, 1H NMR, phase transition, Bromoantimonate(III)

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