On structural phase transition in $(i\text{-}C_4H_9NH_3)_3Bi_2Br_9$: differential scanning calorimetry, dielectric and infrared studies.

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Streszczenie

Two structural phase transitions at 263 and 252 K are detected in a new isobutylammonium crystal $(i\text{-}C_4H_9NH_3)_3Bi_2Br_9$ by means of differential scanning calorimetry (DSC) and dielectric studies. Internal vibrations modes of $(i\text{-}C_4H_9NH_3)_3Bi_2Br_9$ are studied through their phase transitions using the infrared spectrscopy. The infrared studies show that the vibrational state of isobutylammonium cations changes weakly during the phase transition at 252 K. The 263 K phase transition is not reflected in the infrared spectra. The lower temperature phase transition (252 K) is believed to be governed by the reorientational motion of the isobutylammonium cations and may be classified as an `order–disorder' type.

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