



Structural phase transitions in $(n\text{-C}_3\text{H}_7\text{NH}_3)_2\text{SbBr}_5$.

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Streszczenie

Dielectric, DSC, thermal expansion and preliminary X-ray diffraction studies on $(n\text{-C}_3\text{H}_7\text{NH}_3)_2\text{SbBr}_5$ are reported. It was found that this crystal undergoes a complex sequence of phase transitions. On cooling: phase I $\rightarrow$ phase II at 188.7 K (continuous), II $\rightarrow$ III at 165 K (1st order, $\Delta S = 26.8$ J/mol K), III $\rightarrow$ IV at 137 K (1st order, 1.6 J/mol K). On heating: IV $\rightarrow$ III at 154 K, III $\rightarrow$ II' at 168 K, II' $\rightarrow$ II at 177 K (1st order, 2.8 J/mol K), II $\rightarrow$ I at 189 K. All 1st order phase transitions are likely due to the motion of the $n\text{-C}_3\text{H}_7\text{NH}_3^+$ cations. The dielectric dispersion studies between 100 Hz-1 MHz within the phases I and II indicate a fast reorientational motion of dipoles with $\tau < 10^{-7}$ s.

Słowa kluczowe

Alkylammonium halogenoantimonates, Phase transition,
Dielectric, DSC, Thermal expansion

Adres publiczny

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