

Molecular dynamics and phase transitions in tris(dimethylammonium) enneaiododibismuthate(III) as studied by DSC, dilatometric, IR, ^1H NMR and dielectric methods.

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Streszczenie

The phase transitions and molecular motions of the cations were studied in the temperature range 130–300 K in a $[(\text{CH}_3)_2\text{NH}_2]_3\text{Bi}_2\text{I}_9$ (DMAIB) crystal by DSC, IR, dilatometric, dielectric and ^1H NMR methods. It was confirmed that DMAIB undergoes three phase transitions at $T_{c1} = 305$ K, $T_{c2} = 285$ K and $T_{c3} = 235$ K. In the high-temperature phases I–II the cations undergo isotropic reorientations, and in phases III–IV both $\text{C}_3(\text{CH}_3)$ motion and n -fold ionic reorientations take place.

Słowa kluczowe

Alkylammonium halogenobismuthates, phase transition, Infrared, dielectric, thermal expansion, NMR

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