

Motions of methylammonium ions in $(\text{CH}_3\text{NH}_3)_3\text{Sb}_2\text{I}_9$ crystals studied by ^1H NMR.

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The molecular motions and phase transitions at 147 and 111 K in solid tris(methylammonium) nonaiododiantimonate(III), $(\text{CH}_3\text{NH}_3)_3\text{Sb}_2\text{I}_9$, were investigated by measuring the temperature dependences of the proton spin-lattice relaxation times (T_1 and $T_{1\rho}$) in the static and rotating frames and the second moment (M_2) of ^1H NMR absorption above 90 K. In room-temperature phase I, it was revealed that the cations undergo a rapid overall rotation. The cations in low-temperature phases II and III were shown to have almost fixed orientations in the crystals, but performed a rapid C_3 reorientation about the C–N bond axis.

Adres publiczny

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