Crystal structure and phase transitions of $[(C_2H_5)_4N]_6Bi_8Cl_{30}$.

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A new $[(C_2H_5)_4N]_6Bi_8Cl_{30}$ crystal of the family of alkylammonium halogenobismuthates was grown. X-ray diffraction studies showed that the crystals are monoclinic, space group $C2/m$ with $a = 20.117(5), b = 12.682(3), c = 20.396(5)$ Å, $\beta = 93.03(3), Z = 2$. The lattice consists of $(C_2H_5)_4N^+$ cations and a new type of $Bi_8Cl^{6-}_{30}$ anion. Dielectric studies revealed two closely-lying structural phase transitions around 241 K (on cooling). They were interpreted as due to a freezing of the rotational motions of tetraethylammonium cations.

Adres publiczny

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