

Phase transitions in the ferroelectric crystals $[\text{CH}_3\text{NH}_3]_5\text{Bi}_2\text{Cl}_{11}$ and $[\text{CH}_3\text{NH}_3]_5\text{Bi}_2\text{Br}_{11}$ studied by the nonlinear dielectric effect.

Autorzy

Przemysław Szklarz

Mirosław Gałązka

Piotr Zieliński

Grażyna Bator

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Streszczenie

The real part of the complex electric permittivity at low frequencies and at several biasing fields between 0 and 500 V/m has been measured in ferroelectric crystals $[\text{CH}_3\text{NH}_3]_5\text{Bi}_2\text{Cl}_{11}$ and $[\text{CH}_3\text{NH}_3]_5\text{Bi}_2\text{Br}_{11}$ in the temperature range covering the temperature of the ferroelectric phase transitions. Comparative measurements for the known triglycine sulphate $\text{NH}_2\text{CH}_2\text{COOH} \cdot 3\text{H}_2\text{SO}_4$ crystal have been used as a test of the validity and of possible errors in the determination of the ferroelectric equation of state by the method applied. The estimates of the critical parameters T_C , and then have been evaluated for MAPCB and MAPBB on the basis of the Widom-Griffiths scaling hypothesis. Complementary pyroelectric measurements of the spontaneous polarization providing the critical exponent β are in accordance with the parameters obtained

Adres publiczny

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