Phase transition and structure of $(C_3N_2H_5)_2SbF_5$ single crystal.

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Streszczenie

New crystal of the formula $(C_3N_2H_5)_2SbF_5$ was obtained and characterized with DSC, DTA, TGA, structural and dielectric studies. DSC and dielectric studies revealed a structural phase transition of the first order at 216 K on cooling and 220 K on heating. The entropy of the transition ΔS equal to 11.5 J/mol·K gives evidence that the phase transition is order-disorder type. X-ray studies showed that transition undergoes from orthorhombic phase I with a space group of *Pmmn* to monoclinic phase II with a space group $P2_1/m$. The phase transition is proposed to be ferroelastic type. The molecular mechanism of the phase transition is related to ordering of imidazolium cations in phase II that are disordered in phase I.

Słowa kluczowe

phase transition, crystal structure, Electric permittivity

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