Structural characterization, spectroscopic properties and phase transition in 4-aminopyridinium tetrachlorogallate(III): [4-NH_2PyH][$GaCl_4$].

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Streszczenie

Crystal structures of [4-$NH_2C_5H_4NH$][$GaCl_4$] ([4-NH_2PyH][$GaCl_4$]) have been determined at 80 and 120 K by single crystal X-ray diffraction (trigonal space groups R3 and R3m, respectively). DSC studies indicate a presence of one reversible phase transition close to the second order at 110 K with ΔS≈1Jmol-1K-1. Infrared spectra of polycrystalline [4-NH_2PyH][$GaCl_4$] have been studied in the temperature range between 10 and 300 K. Substantial changes in the temperature evolution of internal modes of the 4-aminopyridinium cations are due to the freezing of the 4-aminopyridinium cations below 110 K. Dielectric investigations reveal three independent, well separated relaxation processes in temperature range between 90 and 300 K. Parameters of the relaxation processes have been estimated.

Słowa kluczowe

Infrared spectroscopy, X-ray diffraction, Crystal structure, Dielectric properties, Phase transition

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