Ferroelasticity and piezoelectricity of organic-inorganic hybrid materials with a one-dimensional anionic structure: so similar, yet so different.

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Streszczenie

The synthesis, structual aspects, thermal and dielectric analysis for a new members of ferroic family, a polynuclear Bi(III) and Sb(III) halide complexes based on pyrazolium cation with the formula (C3N2H5)[BiCl4]·H2O and (C3N2H5)[SbCl4]·H2O are presented. The former compound was found to undergo the ferroic phase transition of the ferroelastic type at 213/219 K (cooling/heating scans) whereas the latter one disclosed the piezoelectric feature in the dielectric response function. The molecular motions of pyrazolium cations were analyzed based on the spin-lattice relaxation time of 1H NMR measurements.

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