

The review of the Thesis

**“Micromechanical characterization of composites with imperfect
contact conditions at the interface”**

by

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The piezoelectric composite materials with mechanic and electric imperfect contacts on the phase interface are considered in the Thesis. The periodic structure of composites is assumed that allows to use the asymptotic homogenization method (AHM) for calculating the effective electroelastic characteristics of such composites. The elementary periodic cells of various shapes are considered, the local electroelastic fields in which are found by the method of complex variables and classical Kolosov-Muskelishvili's formulas.

The composites with different arrangements of the elementary cells that leads to the different macroscopic behavior symmetry of the materials are considered and analyzed. The special attention is paid to the analysis of the role of the imperfect interface contacts and influence of this imperfectness on the effective electroelastic characteristics. The obtained results are accompanied by a detailed analysis and compared with results derived by other authors for periodic squares and hexagonal cells. These results may be used not only in technique but (this is especially important) in the medicine also. The recommendations given by the author in the end of his work may be interesting for a wide scientific community in the field of microinhomogeneous materials.

The scientific and methodical level of this work allow stating that it meets the requirements for a PhD-Thesis.

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