

The Effective Thermal Conductivity of the Composite with Imperfect Contact of the Matrix and Anisotropic Spherical Inclusions

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A mathematical model of heat transfer in a composite with isotropic matrix and anisotropic spherical inclusions has been built. Thermal contact of the matrix with inclusions is imperfect. The estimates of the effective thermal conductivity of such a composite are obtained, when inclusion material has a crystalline structure corresponding to the main types of crystal lattice. These estimates may also be interpreted in relation to the electrical conductivity of the composite by electrothermal analogy.

Keywords: *composite, anisotropic spherical inclusions, imperfect thermal contact, effective thermal conductivity.*

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