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# Control of the temperature field and its forecasting in nanocomposite materials

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*The article sets out the methods of calculation of temperature fields in nanocomposite materials, under which means nanosystems with the relevant reologis environment. Offers new mathematical models describing the real physical processes. Given the calculation formulas for the management of temperature field for nanomaterials. On the borders of the estimated volume of provided various boundary conditions: the first, second or third type. Studied nanomaterials with embedded in them nanotubes, which are positioned as additional sources (sinks) of meat. In this work as the basis of selected difference methods. The difference of approaches appear on the stage of construction of the discrete problem-algebraic system of equations. When calculating the continuous area used converging numerical conservative scheme approximating set of the equation. As an example the design of carbon nanotubes, for the dissipation of heat from the surface of the heating element, where water plays a role of the refrigerant. Investigated two-phase nanostructured environment, the temperature field in which can cross the border of the phase transition. Are discussed the problems of management and optimization of thermal processes in nanocomposite media. Examples of the solution of various two-dimensional problems of heat transfer with programs for computers.*

**Keywords:** *nanocomposite, temperature field, nanotubes, control, numerical methods, mathematical simulators.*

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