

The Estimates of the Equivalent Thermal Conductivities of the Fullerene and Single-Walled Carbon Nanotube

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Composites consisting of a matrix and the inclusions of different shapes are widely used as structural and functional materials in a variety of instrumental devices. Composite modification by nanostructured elements (fullerenes, carbon nanotubes et al.) having high mechanical properties allows to improve the macroscopic characteristics of composites. Based on the mathematical model of heat transfer in a fullerene and single-walled carbon nanotube, surrounded by a matrix material, the estimates of the equivalent thermal conductivities of these nanostructured elements are obtained. The values of thermal conductivities can be used for estimation of thermo-physical characteristics of the composite modified by fullerenes and carbon nanotubes.

Keywords: *fullerene, single-walled carbon nanotube, composite, equivalent thermal conductivity.*

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