

Modeling of Process Heat Transport in Abs-Plast

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The technology for the creation of composite materials, satisfactory to the needs of modern engineering and industry, is possible only on the basis of a thorough study of the thermal conductivity of multicomponent systems. Experimental research on such systems has a number of difficulties. In the case of systems containing multiple component fugacities, high-temperatures, or chemically active substances, these difficulties grow rapidly. Characteristic attributes of modern manufacturing include the presence of rigid competition in the market for rapid production. It requires the creation or expansion of an assortment of quality new heat-shielding and electrically isolated non-metallic polymeric materials for construction. The qualitative parameters of such materials, first of all, are characterized by their thermophysical properties: thermal conductivity, heat diffusivity, thermal activity, and specific heat capacity.

For mathematical modeling, design, and optimization of polymeric composite materials, there is a need for research into the parameters describing these processes. This research concerns thermophysical properties for the composite material, and includes studies of the modes of heating involved in reflective transport: specific heat capacity, thermal conductivity, thermal effect, kinetic parameters, etc. The activation energy and kinetic functions are needed, as are qualitative parameters which may restrict these processes. For an increase in the quality of products derived from composition of materials thermophysical parameters are required. Earlier work in insulating materials with a wide engineering application concentrated on naturally occurring materials: wood, cotton fiber, silk to grow oil, natural rubber, natural pitches, stone breeds etc. More recent requirements, in which the materials in electrical devices, the equipment of radio electronics, automatics and transmission lines of steel are more severe.