

EFFECT OF IRREGULAR STRUCTURE ON TRANSPORT PROPERTIES OF THIN LAYERS OF POWDER CAPILLARY STRUCTURES OF HEAT PIPES

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Abstract

The processes of capillary transport and condensation occurring in irregular thin layers of capillary-porous powder materials have been analyzed. It has been shown that the irregularity of thin layers of capillary-porous powder materials (CPPM) causes considerably higher transport capacity than one might expect in the same layers with a regular structure. Due to insignificant thickness of the layers investigated, the heat transfer coefficient at evaporation significantly exceeds similar values for CPPM layers about 1 mm thick and more, and depends essentially on the interfacial pressure drop.