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Investigation of heat transfer enhancement effect on Normal and Nano coated wick structure heat pipes- A comparative assessment

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Abstract

Removal of heat generation is an important characteristic needs to be considered in electromechanical and electronic devices which improve the stability and feasibility of system. Despite numerous cooling methods, heat pipes are recent updating in research line. Heat pipes are one of the super conducting medium of heat energy and it is being used as an equipment to absorb more heat through phase change process of cooling medium circulated in it. It ensures the direct enhancement in heat transfer capacity and characteristics. Nowadays, improvement of the thermal performance in heat pipes getting up with various technologies, especially combination of heat pipe and Nano fluids. It has been experimentally practiced and various results are observed by previous researches that wick structure also a part of reason in improvement. The aim of this research work is to analyze the influence of wick material to improve heat transfer characteristics in heat pipes. In addition, combination of nano coated wick material with heat pipes is comparatively analyzed. From the final observed results it was found that, the best combination of wick material is supporting the better cooling requirements in electronic devices.

Keywords:

Micro-Heat Pipe, Wick Material, Nano Coat, Heat Transfer, Comparision.

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