

عنوان مقاله:

Investigation of the thermal and hydraulic performance of microchannel heat sinks with porous substrates

محل انتشار:

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خلاصه مقاله:

The use of microchannel heat sinks with porous media has been shown to improve heat transfer and reduce pressure drop. In this work, an optimization study is performed in order to assess the effects of porous thickness on the hydraulic and thermal performances of the porous microchannel heat sinks. The results revealed that the pressure drop had no optimum point and it was increased with augmentation of the porous thickness. Moreover, MCHSs have an optimum porous thickness at which the total heat transfer coefficient will be the highest. The addition of a porous structure will increase heat transfer for a porous substrate's thickness below this point. The addition of a more porous substrate will adversely affect heat transfer after the optimum point

کلمات کلیدی:

Microchannel, Heatsink, Porous, Heat transfer, optimization

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