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# Study of thermophysical properties of nanoparticles enhancend phase change materials

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## Abstract

This paper present, Based on the experimental results, two new non-dimensional parameters, namely thermal conductivity ( $Nc$ ) and dynamic viscosity ( $N\nu$ ) are introduced. These new non-dimensional parameters indicate the enhancement of thermal conductivity and dynamic viscosity of nanofluids by utilizing nanoparticles, and they facilitates the general survey of convective enhancement of nanofluids. Using the presented non-dimensional parameters, the effect of working temperature of nanofluid, type of base fluid, size and type of nanoparticles have been studied on the heat transfer enhancement of nanofluids. The results show that utilizing nanofluid can lead to deterioration or enhancement of heat transfer. On the other hand, Decrease of the size of nanoparticles can lead to enhancement of heat transfer.

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