

Documents

Chamkha, A.J., Rashad, A.M., Armaghani, T., Mansour, M.A.

Effects of partial slip on entropy generation and MHD combined convection in a lid-driven porous enclosure saturated with a Cu–water nanofluid
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Abstract

In this work, the influences of heat generation/absorption and nanofluid volume fraction on the entropy generation and MHD combined convection heat transfer in a porous enclosure filled with a Cu–water nanofluid are studied numerically with of partial slip effect. The finite volume technique is utilized to solve the dimensionless equations governing the problem. A comparison with already published studies is conducted, and the data are found to be in an excellent agreement. The minimization of entropy generation and the local heat transfer according to various values of the controlling parameters are reported in detail. The outcome indicates that an augmentation in the heat generation/absorption parameter decreases the Nusselt number. Also, when the volume fraction is raised, the Nusselt number and entropy generation are reduced. The impact of Hartmann number on heat transfer and the Richardson number on the entropy generation and the thermal rendering criteria are also presented and discussed. © 2017, Akadémiai Kiadó, Budapest, Hungary.

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