Scopus

Documents

Selimefendigil, F., Chamkha, A.J.

Magnetohydrodynamics mixed convection in a power law nanofluid-filled triangular cavity with an opening using Tiwari and Das' nanofluid model
(2019) *Journal of Thermal Analysis and Calorimetry*, 135 (1), pp. 419-436. Cited 4 times.

Abstract
Numerical simulation of mixed convection heat transfer in a lid-driven triangular cavity filled with power law nanofluid and with an opening was performed under the effect of an inclined magnetic field. The left vertical wall of the cavity moves in + y-direction, and the bottom wall of the cavity is partially heated. Galerkin weighted residual finite element method was used to solve the governing equations. Influence of Richardson number, Hartmann number, inclination angle, opening ratio and nanoparticle volume fraction on the fluid flow and heat transfer is examined for various power law indices. It was observed that average heat transfer deteriorates as the value of Richardson number and Hartmann number enhances. At the lowest value of Richardson number, the discrepancy between the average heat transfer corresponding to different power law indices is higher. The inclination angle of the magnetic field where the minimum of the average Nusselt number is seen depends on the fluid type. Average heat transfer number is the highest for the highest value of the opening ratio. The average Nusselt number enhances with solid particle volume fraction, and there are slight variations in the reduction in the average Nusselt number when base fluid and nanofluid are considered for various power law indices. © 2018, Akadémiai Kiadó, Budapest, Hungary.

2-s2.0-85041909673
Document Type: Article
Publication Stage: Final
Source: Scopus

ELSEVIER Copyright © 2019 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V. RELX Group™