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Rajarathinam, M., Nithyadevi, N., Chamkha, A.J.

Heat transfer enhancement of mixed convection in an inclined porous cavity using Cu-water nanofluid
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Abstract
In this paper, mixed convection of Cu-nanofluid in an inclined fluid-saturated porous cavity is numerically analyzed by considering three different cases depending on the direction of moving wall(s). The equations of nanofluid-saturated porous medium can be derived by the Darcy-Brinkman-Forchheimer model and are solved using the SIMPLE algorithm. The effect of various non-dimensional parameter such as the Richardson number, Darcy number, inclination angle, solid volume fraction and three different cases are carefully analyzed. The obtained results are presented in the form of streamlines, isotherms, mid-height velocity profiles and average Nusselt number. It is found that the flow and heat transfer play a significant role with the direction of the moving wall(s). © 2017 The Society of Powder Technology Japan

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