

## Documents

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**Effects of mid-moving heated wall on mixed convection in a fluid-saturated non-darcy porous enclosure with sinusoidal heating walls and filled with Cu-Water nanofluid**

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**Abstract**

This article presents the results of a numerical study on mixed convection flow within a porous enclosure driven by a mid-moving heated wall, also filled with nanofluids. The enclosure consists of Sinusoidal heating vertical walls and the horizontal walls are thermally insulated. The finite volume method is employed to solve the governing equations along with the boundary conditions. The results are presented for various Richardson number, Darcy number, phase deviation, solid volume fraction, heat generation parameter and their effects are clearly portrayed in fluid flow, heat transfer attributes, overall heat transfer rate and mid-height velocity graphs. From this study, the observed results are, the Cu-water nanofluid is more efficient to maximize the heat transfer rate while the enhancing Richardson number reduces the overall heat transfer for all the considered range of Darcy number, phase deviation and heat generation parameter. In particular the effect of mid-moving wall plays a key role to enhance the heat transfer rate of the enclosure. © 2017 by American Scientific Publishers All rights reserved.

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