Natural convection flow of a power-law non-Newtonian nanofluid in inclined open shallow cavities filled with porous media

Z.A.S. Raizah Abdelraheem , M. Aly , Sameh E. Ahmed

PII: S0020-7403(17)32946-6
DOI: 10.1016/j.ijmecsci.2018.03.017
Reference: MS 4227

To appear in: *International Journal of Mechanical Sciences*

Received date: 23 October 2017
Revised date: 14 February 2018
Accepted date: 14 March 2018

Please cite this article as: Z.A.S. Raizah Abdelraheem , M. Aly , Sameh E. Ahmed , Natural convection flow of a power-law non-Newtonian nanofluid in inclined open shallow cavities filled with porous media, *International Journal of Mechanical Sciences* (2018), doi: 10.1016/j.ijmecsci.2018.03.017

Highlights

- The variations of the inclination angle lead to decrease the velocities, local and average Nusselt number.
- An increasing the Rayleigh number leaded to a significant enhancement in the strength of streamlines, stronger convection heat transfer,
- An increase in the power-index n reduces the rate of heat transfer and vertical velocity while the average Bejan number is enhanced.
- The local and average Nusselt numbers are decreasing functions of the cavity aspect ratio.