

## Documents

Snoussi, L., Ouerfelli, N., Chesneau, X., Chamkha, A.J., Belgacem, F.B.M., Guizani, A.

**Natural Convection Heat Transfer in a Nanofluid Filled U-Shaped Enclosures: Numerical Investigations**

(2018) *Heat Transfer Engineering*, 39 (16), pp. 1450-1460. Cited 4 times.

**Abstract**

In the present work, enhancement of convective heat transfer rate in three-dimensional U-shaped enclosures using nanofluids is numerically investigated. Two different types of nanoparticles, namely, Cu, and Al<sub>2</sub>O<sub>3</sub>, with pure water, are the considered single-phase nanofluids. Natural convection and geometric parameter effects on the averaged Nusselt numbers are investigated. Velocity vectors and isotherm fields for the Al<sub>2</sub>O<sub>3</sub>/H<sub>2</sub>O nanofluid are presented at various Rayleigh numbers. The governing dimensionless equations are solved using the commercial finite-volume-based computational fluid dynamics code, FLUENT. Our results are consistent with previously published predictions. In particular, heat transfer enhancement is found to increase with increasing nanoparticles volume fractions, Rayleigh numbers, as well as cooled wall length extensions. © 2017, © 2017 Taylor & Francis Group, LLC.

2-s2.0-85032785417

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus