

## Documents

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**Mixed convection and entropy generation of an ag-water nanofluid in an inclined L-shaped channel**

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**Abstract**

This paper investigates the mixed convection and entropy generation of an Ag-water nanofluid in an L-shaped channel fixed at an inclination angle of  $30^\circ$  to the horizontal axis. An isothermal heat source was positioned in the middle of the right inclined wall of the channel while the other walls were kept adiabatic. The finite volume method was used for solving the problem's governing equations. The numerical results were obtained for a range of pertinent parameters: Reynolds number, Richardson number, aspect ratio, and the nanoparticles volume fraction. These results were  $Re = 50-200$ ;  $Ri = 0.1, 1, 10$ ;  $AR = 0.5-0.8$ ; and  $j = 0.0-0.06$ , respectively. The results showed that both the Reynolds and the Richardson numbers enhanced the mean Nusselt number and minimized the rate of entropy generation. It was also found that when  $AR$  increased, the mean Nusselt number was enhanced, and the rate of entropy generation decreased. The nanoparticles volume fraction was predicted to contribute to increasing both the mean Nusselt number and the rate of entropy generation. © 2019 by the authors. Licensee MDPI, Basel, Switzerland.

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