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The performance of a critical review of heat transfer characteristic using nanofluid flow

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the Experimental and theoretical research related to improving the transfer of a number of authors have carried out heat using nanoparticles and their results showed that the heat transfer of nanofluids is very important in this context our work presents a critical model for improved heat transfer This work is done on the basis of a 2D numerical dimension of heat transport models, which can be used to develop a better coupled geometry for a better cooling system This work includes the results of a numerical simulation performed to study the nanofluid flow . Two types of nanofluids involving Al2O3 and CuO nano-particles dispersed separately in base fluids of water and ethylene glycol , those nanofluids were taken to evaluate their effect on the flow around different arrangement of cylinders. The continuity and the momentum equations have been numerically solved by using a special technic. Besides the thermo-physical parameters of nanofluids have been evaluated using the theory of one fluid phase, thus, con-temporary correlations of thermal conductivity and viscosity of nanofluids have been used in this paper as well as our previous work. The correlations are functions of particle volumetric concentration as well as temperature. The results of heat transfer characteristics of nanofluid flow of this critical review rev-eled clear improvement comparing with the base fluids. This enhancement is very interesting in engineering of flows with different situation characteristics, while the gap ratios (G/D) of our review and incidence angle exert an enhancement efficiency influence on the heat transfer characteristics. In this study the results obtained can be a fruitful source for developing and validating of new codes both in scientific and commercial manner.
Key words: Nanofluid, Fluid flow, Heat transfer, 2D simulation, critical review

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