

Heat Transfer Enhancement via Using Al₂O₃/Water Nanofluid in Car Radiator

Authors : S. Movafagh, Y. Bakhshan

Abstract : In this study, effect of adding Al₂O₃ nanoparticle to base fluid (water) in car radiator is investigated numerically. Radiators are compact heat exchangers optimized and evaluated by considering different working conditions. The cooling system of a car plays an important role in vehicle's performance, consists of two main parts, known as radiator and fan. Improving thermal efficiency of engine leads to increase the engine's performance, decline the fuel consumption and decrease the pollution emissions. In this study, the effects of fluid inlet flow rate and nanoparticle volume fraction on heat transfer and pressure drop of a car radiator are studied.

Keywords : forced convection, nanofluid, radiator, CFD simulation

Conference Title : ICMEAM 2015 : International Conference on Mechanical Engineering and Applied Mechanics

Conference Location : Rome, Italy

Conference Dates : March 05-06, 2015