## Abstract

In this work, two dimensional laminar flow of different nanofluids flow inside a triangular duct with the existence of vortex generator is numerically investigated. The governing equations of mass, momentum and energy were solved using the finite volume method (FVM). The effects of type of the nanoparticles, particle concentrations, and Reynolds number on the heat transfer coefficient and pressure drop of nanofluids are examined. Reynolds number is ranged from 100 to 800. A constant surface temperature is assumed to be the thermal condition for the upper and lower heated walls. In the present work, three nanofluids are examined which are Al2O3, CuO and SiO2 suspended in the base fluid of ethylene glycol with nanoparticles concentrations ranged from 1 to 6%. The results show that for the case of SiO2–EG, at ϕ = 6% and Re = 800, it is found that the average Nusselt number is about 50.0% higher than the case of Re = 100.