## Abstract

This study presents the effect of nanofluid and vortex generators compound on heat transfer and friction factor in an equilateral triangular duct experimentally. Two different types of nanofluids namely, Al2O3 and SiO2 nanoparticles suspended in distilled water (DW) with two particle concentrations were successfully prepared and tested. A wide range of Reynolds number was covered from 500 to 8000, approximately. The results of smooth triangular duct using water as a working fluid were validated with literatures and a good agreement was obtained. The present results show a good enhancement in heat transfer by using vortex generator with base fluid while a significant enhancement was registered by using the compound of vortex generator and nanofluids accomplished with a moderate increase in the friction factor. The maximum enhancement in the Nusselt number obtained in this study is 44.64% and 41.82% at 1 vol.% and Re ≈ 4000 for SiO2–DW and Al2O3–DW nanofluid, respectively.