# Effects of Reynolds Number on the Volume Concentration of Al2O3 in Ethylene Glycol

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**Kusammanavar Basavaraj**

**K. Elangovan**

**S. Shankar**

**Anand Kulkarni**

**S. Satyanarayan**



## Abstract

The nanofluid is suspension of nanoparticles in the base fluid used to enhance the heat transfer rate in many applications of heat transfer. The Reynolds number is the dimensionless number used to characterize the flow of the nanofluid to enhance the heat transfer rate. The current study, the effects of Reynolds number on 0.01% volume concentrations of the aluminium oxide (Al2O3) nanoparticles in the ethylene glycol through the flow in the pipe are investigated. In the study, ethylene glycol is considered as the base fluid. The thermophysical characteristics of the Al2O3/EG nanofluid were determined in the current work using a cylindrical copper pipe with an 8 mm diameter and 400 mm length. The heat transfer coefficient (HTC) and Nusselt number were calculated for the Reynolds number varied from 200 to 1200, considering nanofluid inlet temperature of 298 K and