

A Study on Hybrid Nanofluid Flow past a Porous Stretching Surface

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ABSTRACT

The purpose of this paper is to investigate the flow of a Hybrid nanofluid created by the mixing of two nanoparticles, Alumina (Al_2O_3) and Copper (Cu), combined with the base fluid water (H_2O). In a porous media, the fluid is thought to travel through an exponentially extending surface. Using the required similarity transformations, the governing Non-Linear Partial Differential equations that characterise the mathematical model of the Hybrid nanofluid are turned into a set of Ordinary Differential equations. The Keller Box technique, an implicit finite difference method, is used to solve the resultant transformed ordinary differential equations. The obtained velocity profiles are displayed while considering the impacts of the volume of the nanoparticles of the nanofluid and hybrid nanofluid. The influence of the porosity parameter on the velocity profiles is also examined and graphically shown.

KEYWORDS

Hybrid Nanofluid, Porous medium, Keller Box Method, Velocity Profiles.

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