

عنوان مقاله:

Transient MHD Boundary Layer Flow and Heat Transfer of Stretching Sheet Due to Cu-Water and Al_2O_3 -Water Nanofluids

محل انتشار:

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نویسندگان:

Alireza Rezaei Ahvanoei

Alireza Sharbatdar

خلاصه مقاله:

This paper deals with the numerical study of unsteady laminar magneto-hydro dynamic (MHD) boundary layer flow and heat transfer of incompressible, viscous and electrically conducting fluid. The flow is considered over a stretching sheet under effect of magnetic field in the presence of Cu-Water and Al_2O_3 -Water nanofluids. Similarity solution used to transform the governing nonlinear boundary layer equations to nonlinear ordinary differential equations. These equations solved numerically using well-known Runge-Kutta-Fehlberg (RK45) fourth-fifth order method and shooting method. Numerical procedure validated with previous reported work and results have good agreement with previous studies. Finally, The effect of the important parameters such as: unsteadiness parameters, magnetic parameter, volume fractions of nanofluid and Prandtl number has been calculated, analyzed and discussed on velocity and temperature profiles. Furthermore, the effect of these parameters on the local skin friction coefficient and local Nusselt number are studied and results presented graphically.

کلمات کلیدی:

MHD, Stretching sheet, Unsteady flow, Nano fluid, Heat Transfer

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