

Unsteady boundary layer rotating flow and heat transfer in a copper-water nanofluid over a shrinking sheet

ABSTRACT

The study of unsteady three-dimensional boundary layer rotating flow with heat transfer in Copper-water nanofluid over a shrinking sheet is discussed. The governing equations in terms of partial differential equations are transformed to ordinary differential equations by introducing the appropriate similarity variables which are then solved numerically by a shooting method with Maple software. The numerical results of velocity gradient in x and y directions, skin friction coefficient and local Nusselt number as well as dual velocity and temperature profiles are shown graphically. The study revealed that dual solutions exist in certain range of $s > 0$.

Keyword: Rotating flow; Shrinking sheet; Nanofluid