Numerical solution of Heat Transfer on Nanofluid flow past a Moving Inclined Plate along with the effects of MHD and Heat Generation/Absorption.

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1. INTRODUCTION & OBJECTIVE

This paper analyzes and presents the effects of MHD and Heat Generation/ Absorption, along a moving inclined plate with heat transfer on Nanofluid flow. The consideration of Nanofluid containing nanoparticles of Silver, Copper with base fluid Water. The numerical approach of the finite difference type, especially the implicit technique of the Crank-Nicolson method with stability convergence, solves the governing PDEs dimensionless form. The velocity and temperature are investigated and are shown graphically with various combinations of parameter values. The demonstrated graphical presentation uses MATLABR2022b. The central role of applications of heat transfer are energy systems, HVAC, electronic device cooling, automobile, steam-electric power generation, and in characterizing and diagnosing diseases. The present paper is compared with research work and is in good agreement.

KEYWORDS
Heat transfer, Nanofluid, Combined effects, Numerical solution: Crank-Nicolson Method.

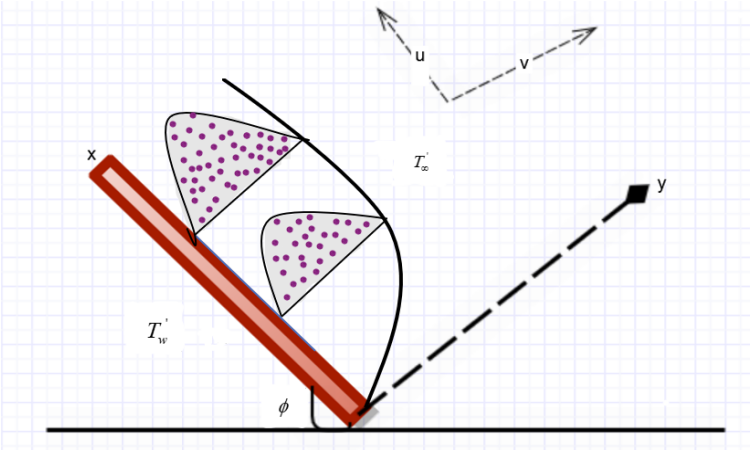

Figure 1. INCLINED PLATE MODEL

2. RESULT& HIGHLIGHTS

1. In this analysis of the paper, Magneto hydrodynamic and Heat Generation/Absorption results on nanofluid past in heat transfer a moving inclined plate are investigated. The dimensionless governing PDE's are solved using the implicit type.
2. The nanofluid flow of velocity increases when it increases in Prandtl Pr, Grashof Gr, and angle of inclination ϕ.

3. The velocity of the nanofluid diminishes when magnetic parameter M, and nanoparticle volume fraction φ rise.
4. The fluid flow of temperature increases with the increase in magnetic parameter M, Grashof Gr, angle of inclination ϕ, and nanoparticle volume fraction φ.
5. The fluid temperature decreases when increasing in Prandtl Pr.

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