

## **ANALYSIS OF HEAT TRANSFER IN HYDROMAGNETIC ROTATING FLOW OF VISCOUS FLUID THROUGH A NON-HOMOGENEOUS POROUS MEDIUM WITH CONSTANT HEAT SOURCE/SINK**

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### **Abstract**

The aim of this paper is to study an unsteady free convection unsteady flow of a viscous incompressible, electrically conducting, rotating liquid in a porous medium past an infinite isothermal vertical plate with constant heat source / sink in the presence of a uniform magnetic field applied perpendicular to the flow region. Expressions for primary and secondary velocities and temperature distribution are obtained by solve the governing equations using perturbation technique. The expressions for the skin-friction coefficient and rate of heat transfer are also derived. The effects on Prandtl Number (Pr), Grashof Number (Gr), Rotation Parameter (E), Heat Sources/ Sink Parameter ( $a_0$ ), Magnetic Parameter (M) and Permeability ( $K_0$ ) obtained on the above flow quantities are studied through graphs and tables.

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**Keywords:** Heat transfer, MHD, Porous media, source sink, Grashof Number.