

**EFFECT OF THERMAL DIFFUSION ON MHD FREE  
CONVECTION FLOW WITH HEAT AND MASS TRANSFER  
PAST A VERTICAL POROUS PLATE**

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**Abstract**

The objective of this paper is to study the effect of Thermal diffusion on MHD free convection flow past a vertical porous plate with heat and mass transfer taking Viscous and Darcy resistance terms into account and the constant permeability of the medium numerically and neglecting induced magnetic field in comparison to applied magnetic field. The velocity, temperature and concentration distributions are derived, discussed numerically and shown in figures 1,2 and 3 respectively. It is observed that velocity increases with increase in  $A$  and  $K$  but it decreases with the increase in  $M$  and  $s_c$ . It is observed that increase in Prandtl number  $P_r$  causes decreases in temperature. It is observed that increase in Thermal diffusion parameter  $A$  leads to increases in concentration.

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Key Words : *Heat and mass transfer, Free convection, MHD, Porous medium, Vertical plate.*

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