

VISCO-ELASTIC FREE CONVECTIVE FLOW AND MASS TRANSFER ALONG A POROUS VERTICAL PLATE

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Abstract

An attempt has been made to study the three dimensional free convective and mass transfer flow of a visco-elastic fluid along a vertical porous plate with transverse sinusoidal suction velocity distribution and uniform free stream velocity. The regular perturbation technique is used to solve the governing equations. The expressions for the velocity field, the skin friction and the rate of heat and mass transfer from the plate to the fluid are obtained. The wall shear stress in the direction of the main flow has been presented graphically for various values of visco-elastic parameter with the combination of other flow parameters.

Key Words : *Visco-elastic, Free convection, Heat transfer, Schmidt Number, Mass transfer.*

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