Visco-Elastic MHD Flow through a Porous Medium Bounded by Horizontal Parallel Plates Moving in Opposite Direction in Presence of Heat and Mass Transfer

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Abstract

An analysis of two dimensional unsteady electrically conducting visco-elastic fluid flow through a porous medium has been carried out in this paper in presence of simultaneous heat and mass transfer. The porous medium is bounded by two horizontal plates moving in opposite directions. The visco-elastic fluid is characterized by Walters liquid (Model B'). A magnetic field of uniform strength $B_0$ is applied in the direction perpendicular to the plate. The suction at the plate is assumed to be periodic in nature. The governing equations of fluid motion are solved analytically by using perturbation scheme. The effects of visco-elastic parameter on the governing fluid motion are analyzed graphically for various values of flow parameters involved in the solution.

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Index Terms

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Keywords

Visco-elastic  Walters liquid (ModelB', Hartmann number  Prandtl number
Reynolds number and Eckert number.