



Scienxt Journal of Mechanical Engineering & Technology Volume-2 || Issue-2 || May-Aug || Year-2024 || pp. 19-30

Exact solutions of an MHD layer elastic o-viscous fluid flow of second order type with angle of inclination on the porous boundary

S. B. Kulkarni Department of Applied Mathematics, Finolex Academy of Management & Technology, Ratnagiri (MS) - 415 639, India

> *Corresponding Author: S. B. Kulkarni Email: sanjay.kulkarni@famt.ac.in

Abstract:

Exact solution of an in-compressible fluid of second order type by causing disturbances in the liquid which is initially at rest due to bottom oscillating sinusoidally has been obtained in this paper. The results presented are in terms of non-dimensional elastic- viscosity parameter (β) which depends on the non-Newtonian coefficient and the frequency of excitation (σ) of the external disturbance while considering the magnetic parameter (m), angle of inclination (θ) and porosity (k) of the medium into account. The flow parameters are found to be identical with that of Newtonian case as $\beta \rightarrow 0$, $\theta \rightarrow 0$, $m \rightarrow 0$ and $k \rightarrow \infty$.

Keywords:

Elastico viscous fluid, second order fluid, electico viscous parameter, porous media, magnetic parameter.