

Documents

Veerakrishna, M., Chamkha, A.J.

Hall effects on unsteady MHD flow of second grade fluid through porous medium with ramped wall temperature and ramped surface concentration
(2018) *Physics of Fluids*, 30 (5), art. no. 053101, . Cited 6 times.

Abstract

The heat generation/absorption and thermo-diffusion on an unsteady free convective MHD flow of radiating and chemically reactive second grade fluid near an infinite vertical plate through a porous medium and taking the Hall current into account have been studied. Assume that the bounding plate has a ramped temperature with a ramped surface concentration and isothermal temperature with a ramped surface concentration. The analytical solutions for the governing equations are obtained by making use of the Laplace transforms technique. The velocity, temperature, and concentration profiles are discussed through graphs. We also found that velocity, temperature, and concentration profiles in the case of ramped temperature with ramped surface concentrations are less than those of isothermal temperature with ramped surface concentrations. Also, the expressions of the skin friction, Nusselt number, and Sherwood number are obtained and represented computationally through a tabular form. © 2018 Author(s).

2-s2.0-85046837761

Document Type: Article

Publication Stage: Final

Source: Scopus