عنوان مقاله:

Hall Effects on Flow past an Exponentially Accelerated Infinite Isothermal Vertical Plate with Mass Diffusion

محل انتشار:

دوماهنامه مکانیک سیالات کاربردی, دوره 9, شماره 2 (سال: 1395)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

The effects of hall current and rotation on unsteady hydro magnetic free convection flow past an exponentially accelerated infinite vertical plate with uniform temperature and variable mass diffusion has been discussed. The flow is induced by a general time-dependent movement of the vertical plate, and the cases of ramped temperature and isothermal plates are studied. The governing partial differential equations have been derived for the velocity, temperature, concentration profiles by Laplace transform technique. The solutions that have been obtained are expressed in simple forms in terms of elementary function and complementary error function. Expressions for velocity, temperature and concentration fields are obtained. The obtained results are discussed with the effect of various parameters like Rotation parameter, Hall parameter, Hartmann number, Schmidt number, radiation parameter thermal Grashof number and mass Grashof number. The numerical values of primary and secondary velocities are displayed graphically. The temperature and concentration distributions are discussed numerically and presented through graphs.

کلمات کلیدی:

Hall EffectaHall effects, accelerated, mass diffusion, Vertical plate.s, Exponential, isothermal, Vertical plate