

1. W Abd El-Meged, H Attia and M Elbarawy, "Analytical solution of Transient Hartmann Flow with hall current and ion slip using finite Fourier transform", Journal of the Chemicals Institutes of the Bulgarian Academy of Sciences and of the Union of Chemists in Bulgaria, to be published in Vol. 46, No. 3, 2014.

Abstract:

The transient Hartmann flow of an electrically conducting viscous incompressible fluid bounded by two parallel insulating porous plates is studied using finite Fourier transform. An external uniform magnetic field while the fluid motion is subjected to a constant pressure gradient. The Hall current and the ion slip are taken into consideration in the momentum equations. The effect of the Hall current and ion slip on the velocity and distribution is investigated.