MHD mixed convection stagnation point flow over a permeable surface

Abstract

In this paper, the effects of suction and injection parameters on magnetohydrodynamic (MHD) mixed convection stagnation point flow are studied numerically. Using appropriate similarity transformations, the governing system of partial differential equations is transformed into a system of ordinary differential equations which are then solved using the shooting method. Numerical results are obtained for the velocity, temperature and concentration profiles. The results show that the suction and injection parameters affect the skin friction coefficient as well as the local Nusselt number for both assisting and opposing flows. The suction parameter increases the skin friction coefficient and the local Nusselt number while the opposite behavior is observed for the injection parameter.

Keywords

MHD mixed convection; Permeable surface; Stagnation point