The effect of wall suction/injection on MHD Marangoni convection boundary layer flow in nanofluid

ABSTRACT

The problem of Marangoni-driven boundary layer flow over a permeable flat surface in an electrically conducting nanofluid is considered in the present paper. Numerical solutions of the similarity equations are obtained using the shooting method. Three types of nanoparticles, namely copper (Cu), alumina (Al2O3) and titania (TiO2) are considered by using a water-based fluid to investigate the effect of nanoparticle volume fraction parameter ű of the nanofluid. It is found that the wall suction or injection has the significant effect on the velocity and temperature profiles.

Keyword: Marangoni convection; Nanofluid; Permeable surface