

## **The effect of slip velocity and temperature jump on the hydrodynamic and thermal behaviors of MHD forced convection flows in horizontal microchannels**

The effect of velocity slip and temperature jump on the hydrodynamic and thermal behaviors of MHD flows in the case of forced convection over flat plate, and in the case of forced convection between two parallel flat plates has been studied. Four mathematical models that represent these cases have been developed. The continuum model of fluid has been used with Knudsen (Kn) number regime  $0.001 < Kn < 0.1$ , with the Maxwell slip velocity being applied along with the Smoluchowski temperature jump boundary on the solid–fluid surface interface. COMSOL software multiphysics was used to solve those four models numerically. In addition, the case of the forced convection between two parallel flat plates has also been solved analytically using MATLAB 7 software