

Steady three-dimensionalmhdmixed convection couple stress flow of hybrid nanofluid with hall and ion slip effect

ABSTRACT

The heat transfer ratio has some important applications in industries and the engineering sector. In this model, the authors used the hybrid nanofluid because the heat transfer ratio of hybrid nanofluid is more as compared to the base fluid; the key objective of this research work is to boost up the heat transfer ratio, for example, to regulate the energy is possible only by adding the heat transmission mechanism in the flow model. The current research paper investigates the steady 3D MHD mixed convection couple stress flow of hybrid nanofluid with hall and ion slip effect. The objective of the current research work is to increase the heat consignment ratio, which is the demand of the manufacturing and engineering sector, this type of flow has some important applications in the industries sector and engineering sector for the purpose of cooling and hotness effect, also hotness and cooling play some important role in daily life. To transform the nonlinear partial differential equation to a nonlinear ordinary differential equation we used the defined similarity transformation. The transform nonlinear ordinary differential equations are solved by an approximate analytical method. The important obtained results are presented in the graphs. The influence of different parameters such as couple stress parameter, mixed convection parameter, nanoparticle volume friction, Hall parameter, magnetic field parameter, thermophores parameter, Eckert number, and prandtl number are taken over graphs. The C_f (skin friction coefficient), Nu (nusselt number), convergence control parameter, and comparison of the present work with the published work are described in the form of tables.