Abstract

Effects of temperature dependent viscosity and thermal conductivity on magnetohydrodynamic flow and heat transfer over a continuous moving plate of a micropolar fluid have been studied. The fluid viscosity and thermal conductivity are assumed to be vary as inverse linear functions of temperature. Using similarity transformations the governing partial differential equations of motion are reduced to ordinary ones, which are solved numerically for prescribed boundary conditions using shooting method. Numerical results for the velocity, angular velocity, temperature profiles and magnetic field are shown graphically and the Skin friction and Nusselt number are presented in tabular form for various values of the parameters giving the flow and heat transfer characteristics.

References

- Ishak A., Nazar R., Pop I., Flow of a micropolar fluid on a continuous moving surface,
Effects of Variable Viscosity and Thermal Conductivity on MHD Flow of Micropolar Fluid in a Continuous Moving Flat Plate


Index Terms

Computer Science
Artificial Intelligence
Keywords
Magnetohydrodynamic flow  micropolar fluid  skin friction  shooting method.