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## Abstract

Steady laminar magnetohydrodynamics flow and heat transfer of an electrically conducting fluid in a rectangular duct in the presence of oblique transverse magnetic field is considered. The walls of the duct are electrically insulated and kept at constant temperature( $T_w$ ). The fluid is kept in motion by a constant pressure gradient and the viscous and Joule dissipations are considered in the energy equation. The dimensionless coupled partial differential equations are solved numerically employing finite difference method for velocity, induced magnetic field and temperature distribution. The computed results for velocity, induced magnetic field and temperature are visualized in terms of graphics for different values of oblique angle( $\theta$ ), Hartmaan number( $M$ ), Prandtl number( $Pr$ ) and the aspect ratio( $A$ ), the ratio of the length to the breadth.

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Computer Science

## Index Terms

Applied Sciences

**Keywords**

MHD flow electrically insulated walls rectangular duct heat transfer finite difference method

aspect ratio.