IN the thesis we study four problems for non-newtonian fluids in the different geometries. In the first problem, we study two cases in the first case the steady MHD flow of an incompressible viscous non-newtonian power law fluid above an infinite rotating porous disk with heat transfer. A uniform magnetic field is applied perpendicularly to the plane of the disk and a uniform injection or suction is applied through the surface of the disk. Numerical solution of the nonlinear differential equation which governs the hydromagnetic and heat transfer are obtained. In the second problem we study the transient flow of a dusty viscous incompressible electrically conducting non-newtonian bingham fluid through a circular pipe and the effect of ion slip into consideration. In the third problem we study the unsteady flow in a porous medium of an incompressible non-newtonian viscoelastic fluid between two parallel horizontal non-conducting porous plates with heat transfer.

IN THE fourth problem we study the steady axisymmetric flow through a porous medium of an incompressible viscous fluid impinging on a permeable flat plate with heat transfer.