

**Abstract :**

In this paper, the numerical investigation of the flow, which is that, develops in the narrow gap between two concentric short conical cylinders was performed. The annular radial gap is considered constant along of the system for various apex angles and the aspect ratio is= 5. The inner conical cylinder rotates with a constant angular velocity and the outer one is at rest. The numerical and analytical Solutions for the Couette flow for short cylinders was compared and the hydrodynamic flow in conical Couette-Taylor is simulated for different apex angles. The effect of taper angle on the pattern formation and structure flow of an incompressible viscous fluid is simulated using finite-volume method. The spiral motion of fluid for different Taylor numbers is highlighted; the plots of hydrodynamic field and velocity profiles are presented.