**DESIGN AND ANALYSIS OF MINIATURE**

**POSITIVE DISPLACEMENT PUMP**

**ABSTRACT**

A positive displacement pump causes a fluid to move by trapping a fixed amount of it then forcing (displacing) that trapped volume into the discharge pipe. Or a positive displacement pump has an expanding cavity on the suction side and a decreasing cavity on the discharge side. Liquid flows into the pump as the cavity on the suction side expands and the liquid flows out of the discharge as the cavity collapses. The volume is constant given each cycle of operation.

In this project, we will create one miniature positive displacement pump like reciprocating pump with miniature size using solid works premium 2014 software. Later, we perform a computational fluid dynamic (CFD) analysis on that reciprocating pump using solid works as well as Ansys fluent software’s. By doing this analysis we get to know the velocity and pressure flow of the fluid inside the pump as well as outlet flow. We can also know the temperature variation of the thin surrounding walls of the reciprocating pump during the flow of a fluid.