**CFD ANALYSIS OF AN ENGINE INTAKE VALVE**

**ABSTRACT**

The air standard efficiency for SI engine is approximately 60% under full load condition but the actual brake thermal efficiency under full load condition is approximately 32.6% which is due to the various losses that occur. One of the primary lose is burning time loss which is approximately 4% and occur due to finite time combustion of the charge. This lose can be reduced to some extend by generation of a higher degree of swirl which will increase turbulence intensity within the engine cylinder. The production of turbulence of higher intensity is one of the most important factors for stabilizing the ignition process, fast propagation of flame, especially in case of lean-burn combustion. In general, two type of vortices are utilized in order to generated and preserve the turbulence flows efficiently. These vortices are usually known as swirl and tumble flows, which are organized rotations in the horizontal and vertical plane of the engine cylinder, respectively

In this project CFD is used to simulate the flow through a valve design for internal combustion engines. CFD is numerical method for simulating the behavior of systems involving flow processes