**ABSTRACT**

Centrifugal pump are used in naval applications and motors. The Contemporary blades in Centrifugal pump used in naval applications are made up of Aluminum or Steel. It is proposed to design a pump using Computer Aided Design (CAD) software with various metal alloys and Non-Metallic composite materials, analyze its strength and deformation using simulation software. In order to evaluate the effectiveness of Metal Alloys and Non-Metallic composites.

The present work aim is to change the material and performing the different analysis like **Static, Dynamic, Flow Simulation** & Cost Analysis to find the best material to decrease the weight and increase its efficiency by using the software SOLID WORKS (2014 Premium Version). This also involves the method of manufacturing process to realize the pump using Non-Metallic composite material.