**STRESS ANALYSIS OF HELICAL STRAIGHT BEVEL GEAR**

**ABSTRACT**

Gears are an integral and necessary component in our day to day lives. They are present in the satellites we communicate with, automobiles and bicycles we travel with. Gears have been around for hundreds of years and their shapes, sizes, and uses are limitless. For the vast majority of our history gears have been understood only functionally. That is to say, the way they transmit power and the size they need to be to transmit that power have been well known for many years. It was not until recently that humans began to use mathematics and engineering to more accurately and safely design these gears. The thesis aims to develop a procedure for the creating of geometry and analysis of straight bevel gears. Bevel gears are widely used because of their suitability towards transferring power between nonparallel shafts at almost any angle or speed. The American Gear Manufacturing Association (AGMA) has developed standards for the design, analysis, and manufacture of bevel gears.

 The main objective of the project is to design helical bevel gear with proper dimensions and analysis is carried out to determine the critical stresses and deformations. In this project we assign different materials to find out the better material for bevel gear. The design of bevel gear is done in solid works premium 2014. And analysis is carried out in solid works simulation.