**STRUCTURAL ANALYSIS OF A COMPOSITE**

 **BEARING ASSEMBLY**

**ABSTRACT**

A bearing is a [machine element](https://en.wikipedia.org/wiki/Machine_element) that constrains relative motion to only the desired motion, and reduces friction between [moving parts](https://en.wikipedia.org/wiki/Moving_parts). The design of the bearing may, for example, provide for free [linear](https://en.wikipedia.org/wiki/Line_%28geometry%29) movement of the moving part or for free [rotation around a fixed axis](https://en.wikipedia.org/wiki/Rotation_around_a_fixed_axis) or it may prevent a motion by controlling the [vectors](https://en.wikipedia.org/wiki/Vector_%28mathematics_and_physics%29) of [normal forces](https://en.wikipedia.org/wiki/Normal_force) that bear on the moving parts. Many bearings also facilitate the desired motion as much as possible, such as by minimizing friction. Bearings are classified broadly according to the type of operation, the motions allowed, or to the directions of the loads (forces) applied to the parts.

In this project, we will create a model of the bearing assembly with different types of composite material properties like AL-MG materials etc., using solid works premium 2014 software. And we perform a structural analysis on that created model using finite element method ansys software. We will get stress, strain and deformation results for the applied load factor.