**Design And Analysis Of Honey Comb Structures With Different Cases**

**Abstract** -

Honeycomb structures are natural or man-made structures that have the geometry of a honeycomb to allow the minimization of the amount of used material to reach minimal weight and minimal material cost. Types of honeycomb structures are depend upon the geometrical shape. There are different types of honeycomb core structures like square, hexagonal, pentagonal, tetrahedral, pyramidal etc. In this project we are comparing the structural analysis for square and hexagonal honeycomb structures and thermal analysis of square and hexagonal honeycomb structures. Structural analysis is the determination of the effects of loads on physical structure. To perform an accurate analysis an engineer must determine such information as structural loads, geometry, support conditions, and materials properties. The results of such an analysis typically include deformation, stresses and displacements. This information is then compared to criteria that indicate the conditions of failure. Thermal analysis calculates the temperature distribution and related thermal quantities in the system or component. Typical thermal quantities of interest are: The temperature distributions:(a) The time to reach steady state,(b) The steady state temperature distribution (using a transient analysis),(c) The temperature distribution after 50 seconds;The amount of heat lost or gained; Thermal gradients; Thermal fluxes.

Key words - CATIA modelling of the product, static analysis, Structural Analysis, Thermal analysis, strength