

Fabrication and Analysis of Traction Gear Using Different Composite Materials to Improve Transmission of Gear

K. Santhosh, P.Anil Kumar

Department Of Mechanical Engineering
Kakatiya Institute Of Technology and Science Warangal
Santhoshyadav286@gmail.com, pak.me@kitsw.ac.in

M. Venkatapathi

M.Tech, Supervisor of neeraja Industries pvt.lmtd Hyderabad
venkatapathi896@gmail.com

Abstract

The principle of gear is a toothed wheel that works with other to transfer the relation between the speed of driving mechanism to the driven mechanism. The gears can also change the speed torque and direction of power source. In this paper a detailed analysis and fabrication of a high strength low cost traction was described. Initially the traction gear is modeled in CATIA V5 software and then it is imposed on ANSYS19.2 version to analysis the different materials of grey cast iron, carbon steel and aluminium silicon carbide. The results are compared and to withstand the limits emphasized the performance of traction gear with different load conditions to determine the errors and the stresses developed on the traction gear and also to identify which material is suitable for fabrication using that material fabricated the traction gear to give the better performance to withstand the effects.

Keywords

Traction gear, Structural analysis, Cast iron, Carbon steel and aluminium silicon carbide