

Design and Fabrication of Solar Integrated Hybrid Car

Abstract

The hybrid cars have been out in the market for many decades, the continuous advancement in the hybrid technology has always proven beneficiary for not only the populace but for the planet as well. This project suggests a bit modification in the hybrid cars in a sense that commercially available hybrid vehicles are not equipped with solar panel and solely depend upon engine for battery backup. The same car when assisted with solar will decrease the charging time, fuel dependency, hazardous gas emissions and will make the energy out if the nature which on other side will be wasted.

The vehicle in parallel HEV and has been made able to cruise on both motor and solar independently. The vehicle has been designed to follow the regular standards and has been equipped with disc brakes at front wheels and drum brakes at rear wheel, both Mac Pherson and leaf spring suspension systems are used in the vehicle as the load on the vehicle is not uniform. 125CC engine has been designed which cruises the vehicle up to 65 Km/h practically and a 24V, 2.5 H. P motor having 1750 R.P.M(s) can drive the vehicle up to 25 Km/h the speed corresponding to the motor can



be upgraded up to 50 Km/h by utilizing either a separate gear or pulley mesh. The vehicle is rack and pinion steered. The transmission system is of Drive shaft and engine side and pulley mounted on motor side, the engine contains 5 round gears whereas the motor has been equipped with a single pulley only. The batteries get their selves charged when the vehicle runs on engine.

The vehicle has been successfully manufactured and is fully operational in all the aspects, the stated specifications has been attained. The solar panels can fully charge the batteries in 8.8 hours ideally at 50% discharge rate, the fully charged batteries can cruise up the vehicle up to 6.3 hours as the attached batteries can only be safety discharged to 50%.

The design standards have been successfully reached, a small modification like this will surely result in the ample advantages as proven by this project.