A Electrical Hybrid Vehicle

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Abstract— With the advancement in 21st Century, there has been increase in usage of Oil and Gas leading to problems like Global Warming, climate change, shortage of crude oil, etc. Due to these reasons Automobile Companies have started doing research for making Hybrid Technology usable into the daily life. The technologies used in the making of Hybrid Cars such as "Hybrid Electric Vehicle" and "Plug In hybrid electric vehicles". Hybrid drivetrains for vehicles combine multiple power sources in order to increase the driving functions. The function can enhance the fuel consumption, emissions, comfort, driving performance and safety.

Key words: Electrical Hybrid Vehicle, Electrical Vehicle

I. Introduction

Hybrid vehicles have become increasingly popular in the automotive marketplace in the past decade. The most common type is the electric hybrid, which consists of an internal combustion engine (ICE), a battery, and at least one electric machine (EM). Hybrids are built in several configurations including series, parallel, and the series parallel configuration considered here.

Hybrid vehicles are characterized by multiple energy sources; the strategy to control the energy flow among these multiple sources is termed "Energy Management" and is crucial for good fuel economy.

A hybrid vehicle is a vehicle that uses two or more distinct power sources to move the vehicle. The term most commonly refers to hybrid electric vehicles (HEVs), which combine an internal combustion engine and one or more electric motors.

II. Literature Review

- The review of literature will help in understanding the concepts, theorems and different factors that affects the performance of machine. Iqbal Hussain in their book "Electrical and Hybrid Vehicles" (kinetic energy) helps to store the energy while breaking.
- Prof. Jayesh Patel, and Lab. Ass. Mr. Hitesh Patel Who give use the way and guidance for development of this Hybrid vehicles.

III. Working Principle

Regenerative braking is an energy recovery mechanism which slows down a vehicle by converting its kinetic energy into another form, normally into electrical energy, which can be used immediately or stored until needed in high voltage batteries. The electric motor is operated in reverse during braking or coasting, acting as generator. The wheels transfer kinetic energy via drivetrain to generator. At the same time, generator resistance produced from the electricity created, slows the vehicle. When more braking torque is required than the generator alone can provide, Additional braking is accomplished by friction brakes.

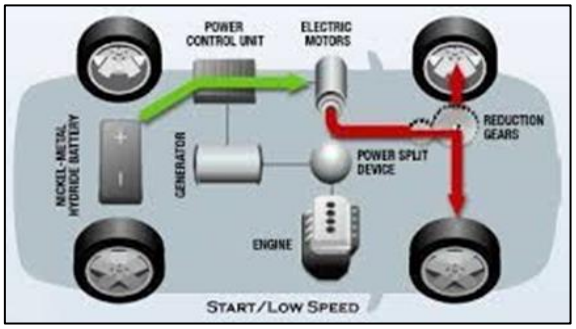

Fig. 1: Working Principle

IV. Conclusion

Hybrid Cars use no energy during idling state; they turn off and use less energy than petrol engines at low speeds. At lower speeds, no smog is emitted maintaining its sustainable advantage. Till lower speed, the car runs on the electric motor and on cruising speed, it runs on IC engine. They offer greater mileage than conventional cars. Noise pollution and emission of CO2 is considerably reduced. But, they are more expensive than conventional cars, are more complex in construction and working than IC engine cars, offer larger repair bills, capacity of batteries is not much advanced the energy management controller for a hybrid vehicles a major factor in the vehicle's overall performance.

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