INTRODUCTION:

Scope of the Work

In the present scenario the vehicles are one of the most pollution producing agents in the nature. To overcome from this pollution electric car is the best. Electric car is an idea from 18th century, and still it is under implementation with more advance methods. As we know that by using the MG-Set (motor generator set), we can regenerate the power dissipated in the motor. It can also be used as variable frequency ac or dc supply for any device. By mechanical energy we can produce electrical output using MG-Set principle, so this can be worked as engine in the modern electric car to replace the IC-engine (Internal combustion engine), which has the higher capacity as compared to IC-engine.

Importance

By comparing to the existing electric car, frequent battery charging station is not required and also run time is also more. By implementing a new technology as the MG-set, the plug-station can be overcome and thus electricity can be saved.

Relation to the Previous Work

In present electric car, frequent charging stations are required for charging the battery to run the car. But in our proposed model, two batteries are used. Initially primary battery is charged and it is used for driving the load as well as to charge the secondary battery. This is done by utilizing conversion principle of MG-Set. If primary battery is drained out, then it will auto switch to the secondary battery to drive the load as well as to charge the primary battery, this operation is done by using the microcontroller for switching purpose, by this principle charging station can be overcome.

OBJECTIVE:

This is a designed project for automobile industry. The objective of the project is to teach students regeneration of electric power using motor generator set (MG-Set). Here the students get exposure of Automation Products:

1. The students will get hands on, experience on using auto cad, microcontroller, load management, dc drive etc...
2. The students will also get exposure on the mechanical design of an electric vehicle.
System Integration:
On the system integration side the students will be learning the assembling of different part of electric vehicle. And also, they will be developing microcontroller program, to make the control unit operation automatically without the need of any manpower.

METHODOLOGY:

Methodology used will be as follows.
First step is to develop a design of control circuit for charging and discharging the battery for driving circuit. ..................3weeks
Testing and designing of converter circuit and implementing changes required for operating the system. ..................4weeks
Integration of mechanical equipment with electrical system. ..................3weeks
Final trail run, testing, demonstration and documentation. ..................2weeks
Total Duration of project........12 weeks

CONCLUSION:
The Present electric car has the variation in the battery charging and discharging, due to losses in the power supply. Thus run time and efficiency of the electric car is reduced. Frequent battery charging station is required for charging the battery. The loading capacity of the electric car is less because of less power rating of driving motor.
In the proposed project, with the batteries, MG-Set, and the control circuit as the three significant parts of the car, there are many benefits of these vehicles in comparison to the gasoline-powered cars and rechargeable electric car. In this auto recharge electric car, dual batteries are used for power supplying the motor generator set. From the motor generator set it is connected to voltage regulator circuit for supplying the constant power to driving motor as well as to battery charging. By this process the perpetual energy loop is produced. Pic microcontrollers are used for switching the dual battery by using the two channel relay, voltage sensors are used for continuous monitoring the voltage across the dual battery. By this process the efficiency and millage of the electric car is high compared to gasoline-powered cars and rechargeable electric car. In future these will be able to soon replace the gasoline vehicles and rechargeable electric cars.

FUTURE WORK:
1. The proposed project employed with photo voltaic panel on the top of the car and wind propeller in front of the car can be used as hybrid vehicle.
2. The proposed model can be designed using PLC to reduce signal-to noise ratio.
3. By using high capacity and less self discharging batteries the efficiency of the proposed system can be improved.
4. This system can be implemented for higher loads by doing considerable changes in the circuit design.
5. The proposed system can be used to implement power inverter for home.