

Designing and Fabrication of Green Vintage Car

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Abstract

Design and fabrication of an electric operated car named as “GREEN VINTAGE CAR” is described in this paper. It is a car which will operate completely on electricity with the help of a DC motor and a rechargeable battery. In this project, authors are trying to give this tech a new feature like a constant speed switch which will keep the car going with a constant speed without using the accelerator. As this battery operated car technology is new in the Indian commercial market and users will face a little difficulty in starting phase. So, they will hesitate to enrol in this evolution. That's why researchers are focusing in this particular problem and trying to give this car a complete vintage look so that people may find this attractive and hopefully won't hesitate to accept this new technology and also help to reduce the global warming issues, which has been increased by all the diesel or gasoline operated car.

Keywords: Green vintage car, electric operated car.

1. INTRODUCTION

The name “GREEN VINTAGE CAR” is given due to two reasons, the first reason is that its working mechanism is so environment friendly as it does not use any diesel or gasoline which produces the pollution. It operates completely on electricity. That is what green name stands for. The second is that its look is completely vintage. The vintage car era was started in 1919 and ended in 1930. The car operates with a rechargeable battery with a controller which will control the supply to the motor so that the speed of the car can be controlled. As this electric operated car technology is new in India, it may find some difficulties. The users got used to drive the cars that operate on diesel or gasoline. So we tried to give this a complete vintage look so that users will find it attractive. The car has a direct switch which will keep the car going with a constant speed and the driver will feel comfortable while driving on the highway as he/she does not need to keep pushing the accelerator continuously.

2. LITERATURE REVIEW

In 1884 the first practical production electric car was built by Thomas Parker^[1]. He used his own designed high capacity rechargeable batteries in his electric car^[2]. In 1888 the “FLOCKEN ELEKTROWAGEN” was designed by ANDREAS FLOCKEN^[3]. In 1897 in USA electric cars were used commercially first time. A company named Tesla motors began to make Tesla roadster in 2004 which was first reached to customers in 2008. The roadster was first all-electric car which used lithium-ion cells. It was the first all-electric car to travel about 320 km per charge^[4]. The Tesla Model 3 was announced on March 31, 2016 the reservation were made during the end of the first week was above 3,25,000 since the booking was opened, the customers were paying the amount of 1000 US dollar deposit to reserve the car^[5]. Nissan Leaf, is the top selling electric cars, which in December 2015 passed 200,000 units after its introduction^[6]. In the same month, the Renault-Nissan Alliance, which is the top all-electric cars manufacturer, sold the 300,000 electric cars worldwide^[7]. In November 2016, 150,000 unit of Tesla Model S were sold.



Figure 1 Electric car built by Thomas Parker [8]

Motivation: In India New Delhi is on the position sixth among the most populated metropolis in the world and is one of the most polluted cities in India. One of the reasons is the heavy duty vehicles and cars that operate on diesel or gasoline. These combustion engines cars eject the emissions which is the major cause of environmental issues in Metro cities of India. So, these particular problems motivate the researchers to make a car which would not produce any pollution i.e. eject harmful emissions and noise pollution. The operation car with negligible noise and air pollution with vintage design is a novel idea to catch the attraction or motivate the automobile companies to green car evolution respectively.

3. Designing and Fabrication

Initially, an old “MARUTI Gypsy” has been purchased for basic foundation and modification. Further, the weight of the chassis is reduced as possible by removing the unnecessary parts like; side angles, engine components, braking assembly, top roof, which will help to increase the power of BLDC motor to run the car with more effective results.

Designing and fabrication work is divided into two parts:

- (i) One team is working upon the working of chassy by using BLDC motor.
 - (ii) Second team is working upon the fabrication and manufacturing of outer body of car.
- Both the works are in progress



Figure 2 Purchased chassis of old gypsy

Current progress of work is shown below in Figure 3 and 4.

- (i) Body frame and chassis get separated followed by removal of engine and also the fuel storage.
- (ii) Entire seating position is removed and redesigned by the students



Figure 3 Back view of frame of the gypsy



Figure 4 Front view of the frame of the gypsy

5. Conclusion

“Green vintage car” a car which is going to work on electricity, and will eject no emission like all other diesel or gasoline cars. Its working will be so environment friendly that it will create negligible pollution to the environment as compared to all other cars whose working depends on some kind of fuels. This car will have a switch which will free the person who is driving the car from accelerator, and the car will keep moving with a constant speed. Its look is going to be Vintage in design so that the users will find it attractive and get motivated in the field of green transportation.

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