

Design of continuous charging system for EVs

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ABSTRACT

Electric vehicles are the immediate solution to dramatically reducing emissions from transport sector. There is a continuing increase in the number of EVs in use, but their widespread and massive acceptance by automotive consumer is related to perform they can drive. The most important feature of EV is how long it can be run. The main purpose of our project is to provide wide range of EVs with single charge. We are trying to introduce basic block diagram to describe one system, which will helpful for new evolution of EVs. The design of this project is very simple as well as construction of it. This project can be implemented in EVs to avoid short range.

Keywords - Capacitor, Electronic Control Module (ECM), Regenerative electro motor, Two Battery packs

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I. INTRODUCTION

1.1 CONCEPT

In this technological era, the world is facing energy crisis. We are going to present extend range in EVs. In this, we paper will discuss about how to extend range and how continuous charging system will work.

Our tentative design is introduce over here by basic drawing as shown in figure with elements name. Now we are going to start physical model. Our concept to charging EVs while it is in use and increase the range of it, with help of our legendary motor (Regenerative electro motor). This model would help world to solve problem of limited use of EVs.

1.2 COMPONENTS OF THE MODEL

- 1 regenerative electro motor
- 2 two battery packs
- 3 electronic control module (ECM)
- 4 capacitor

1.3 FULL CYCLE

For easy understand, we are introducing a block diagram of it. It would help everyone to show power flow, which used to run the vehicle and how second power is generate for charge. For easy clarification, show figures.

For the complete working cycle, we use a regenerative electro motor, which has two functions. First, it is use to produce torque and second, it can

also produce an electric charge. Mechanical power for drive vehicle and electric current for charge battery pack. But single battery can't handle this much work at same time so we use 2 battery packs, one for power source and second as storage so that we can easily defeat our enemy heat.

In this system, we arrange a system with new devices to increase a range of EV. it requires four main elements to make possible. Game changer part is all new regenerative electro motor, which can provide mechanical drive and electric charge. it has two battery packs, both are automatically inter changeable one for drive vehicle while another one for store energy produce by regenerative electro motor. We arrange one capacitor for providing fluent charge for charging. Whole system control by the Electronic Control Module (ECM)

First of all, let we know about flow of power, it comes from battery pack no matter which one. This charge is taken by regenerative electro motor for drive vehicle. At same time regenerative motor produce a charge, which is stored in capacitor, latter it will use for making fluent charge for charging remains battery pack. When ECM sense capacitor is fully charged it start to send charge directly to the battery which one needs recharge.

The main reason behind to put capacitor in the system is for making instant performance, capacitor can give power to motor at high rate so that motor can run at maximal speed this type of situation is required after turning point or on racing track. Second function of capacitor in our system to

provide fluent charging current to battery pack when speed of Motor decrease, so produced power is less then requirement. To fill this gap, we put capacitor in the system. When lack of charging power is happen, capacitor is full filled its demand and charge can flow continuous to another battery. Charging power is regulate by control module, which can be set up according to battery pack's specifications. So every time when motor run, constant power continuous charge the battery.

When first battery remains ~25%, on that time electronic control module start taking power from another battery, which we charged when first battery pack discharging. At that time, electronic control module change the function of both battery pack.

This cycle is continuous till vehicle is running. In this theoretical data vehicle does not required charging but physically we have limitation we can boost 900% range then actual range

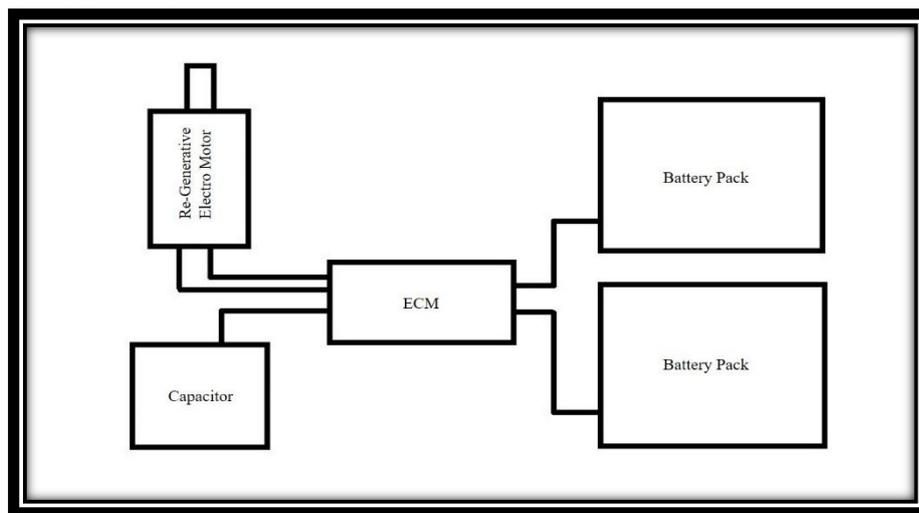
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II. FIGURES AND TABLES

FIG. BLOCK DIAGRAM



III. CONCLUSION

By the advantage this project, we definitely able to increase selling of EVs and also it can be alternative option for fuel vehicles.

If we think theoretically, it has no power losses but practically, it has power loss due to heat and other factors. We are confident on our project and next generation of this system will bring almost no charging required.

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