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## **FREE BATTERY CHARGING SYSTEM IN E VEHICAL FOR SOLAR SYSTEAM**

*<sup>1</sup>Bhise Gaurav Suresh, <sup>2</sup>Bhise Kanhaiya Suresh, <sup>3</sup>Patil Sumit Mahavir, <sup>4</sup>Sangar Ruturaj Gajanan, <sup>5</sup>Bharamgonda Shubham R*

Student, Department of Electrical Engineering, Sharad Institute of Technology Polytechnic, Yadrav.  
Lecturer, Department of Electrical Engineering, Sharad Institiute of Technology polytechnic, yadrav.

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### **ABSTRACT :**

Utilizing a buck boost converter project for battery charging improves mobility, environmental quality, and electric efficiency. We use two batteries ,12-volt, 1.5 ampere batteries in this setup. The car is powered by first battery and second battery start charging at running time of car By Using Solar Panel. Two DC motors used 30RPM. And the second battery received the energy produced by this. However, a second battery charge can reach 30% to 45% of its rated voltage.

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### **INTRODUCTION :**

battery charging with a buck boost converter. You may charge the battery while driving thanks to this method. Dual 12-volt, 1.5 amp DC batteries power it. The automobile is powered by the first battery. Additionally, while driving, the second battery is charged. For this, three DC motors were utilized. Among them, one is a generator. Electrical energy is produced by the generator and is stored in two batteries. We have demonstrated how both batteries are charged. Your car's interior lighting can be operated by this voltage that is produced. This method eliminates the need for

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### **PROBLEM STAAASTEMENT :**

The electrical bikes we have charge the battery on charging station.

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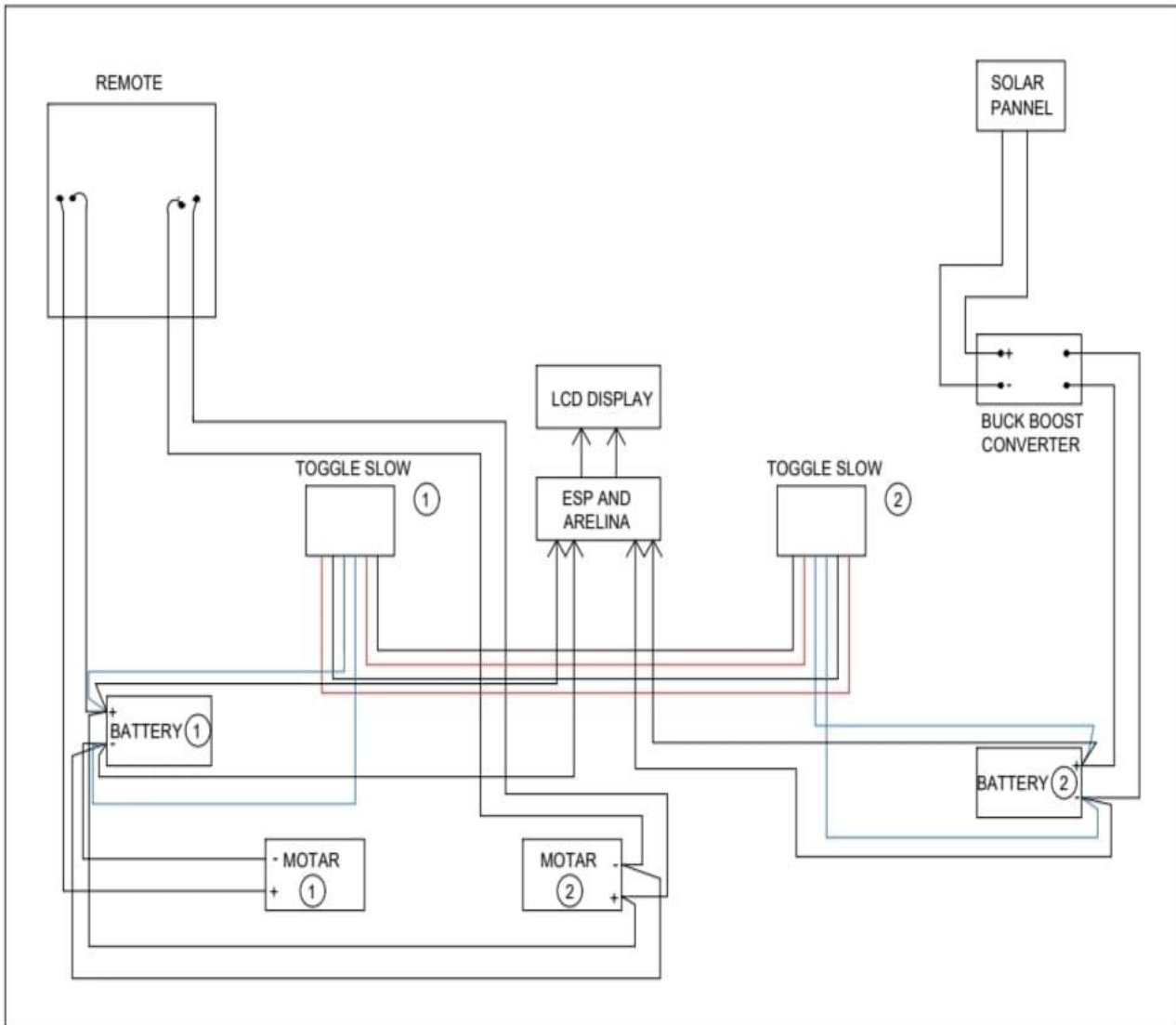
### **LITERTURE REIEW :**

Design and fabrication of e vehicle by using the solar panel  
The battery charge at running time of car by using solar system  
Here a 2 DC batteries used 30rpm  
These motor supplied with one battery and it motor used for the run to car  
Another battery used to the charged at running condition  
The another battery 2 connected to the solar panel and it get charged at running  
When 1battery discharged at that time 2 battery used in running car and 1battery start to charge by using solar panel

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### **Methodology :**

**Block Diagram**



### Working :

When we switch ON the toggle switch the supply get started and the is get parallel divided is also turn on the the direction of car and to move the car in forward and reverse direction.

With the help of that control board we can start the car. At that time the battery-1 will act's as a main battery means the supplying battery and after starting of rotating of wheels of the car the wheels of car and

After start rotating of the car the for main battery and the energy supply will get generated solar panel thro. And this generated supply will given to the battery-2 is totally discharged in the nature. And at that time the battery-2 will be get in charging condition and at first the supply is given to the charging circuit because we have to give the constant supply source to the battery which is given by the charging unite.

At with the help of the Display we will get the how much the battery-1 will get discharged and battery-2 will how much get charged. And after the getting of totally discharge of the battery-1. Then we have to replace the battery-2 at the place of the battery-1 to drive the wheels of car and battery-1 at the battery-2 to charge the battery in solar system .

This way will charge the battery of the car at the time of running condition of the car in solar system .

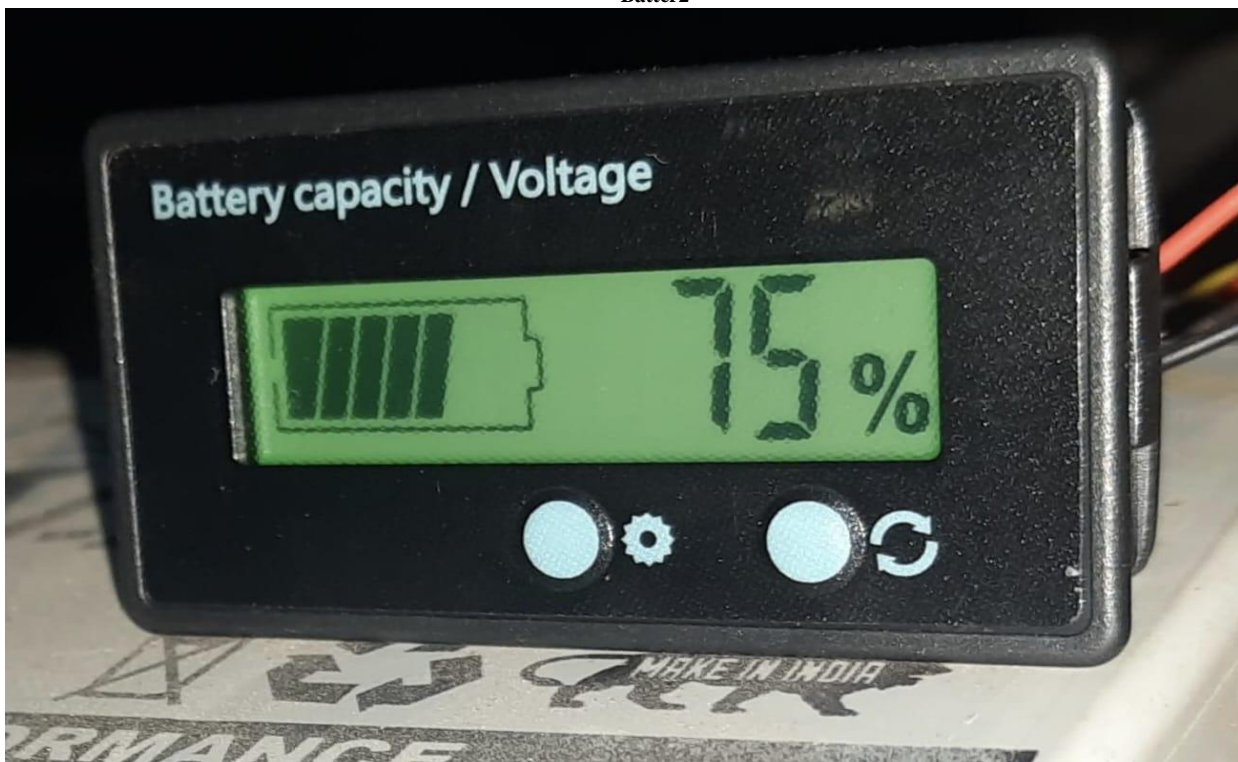
A free charging system for electric vehicles utilizing solar power involves integrating photovoltaic panels onto the vehicle's surface to harness sunlight and convert it into electricity. These panels would be strategically placed on the car's roof, hood, or other suitable areas to maximize exposure to sunlight while driving or when parked. The captured solar energy would then be stored in the vehicle's battery pack or used directly to power the electric motor.

### RESULT :

Batter1



Batter2



### Conclusion :

In summary, free charging system in e vehicle for solar system represents an innovative approach to enhancing the efficiency and sustainability of electric vehicles. By integrating various renewable energy sources and energy recovery mechanisms, such systems can help address range limitations and promote wider adoption of electric cars

To display his data, thea foresaid architecture can be coupled with mobile phones. With the help of the Wi-Fi module, we can transfer data to the Thing speak platform. Even from remote regions, data can be collected and seen. This prototype might also be used to create a multi-battery monitoring system. The battery's basic parameters aid in the monitoring of the battery's condition. The integration of cloud and IOT into the

Battery Monitoring System will aid in data analysis. Modification can be made to the system to improve its functions.

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### FUTURE SCOPE :

A free charging system in a vehicle for a solar system, also known as an energy harvesting system, is a technology that captures ambient energy from the environment and converts it into electrical energy to charge batteries or power electronic devices. The future scope of such a project is promising due to several factors:

1. *Renewable Energy Integration:* As the world increasingly focuses on renewable energy sources such as solar, wind, and kinetic energy, the need for efficient energy harvesting and storage systems becomes more crucial. A free charging system in a vehicle for a solar system can complement renewable energy sources by capturing energy from ambient sources and storing it for later use.
2. *IOT and Wearable Devices:* The proliferation of Internet of Things (IOT) devices and wearable electronics creates a demand for compact and self-sustaining power solutions. Energy harvesting technologies can be integrated into these devices, enabling them to operate without the need for frequent battery replacements or external power sources.
3. *Remote and Off-Grid Applications:* In remote or off-grid locations where access to traditional power infrastructure is limited or costly, a free charging system in a vehicle for a solar system offers a reliable and sustainable power solution. This includes applications such as environmental monitoring, agricultural sensors, and remote sensing devices.
4. *Green Building and Smart Cities:* With the growing emphasis on sustainability and energy efficiency in buildings and urban infrastructure, a free charging system in a vehicle for a solar system can play a significant role. They can be integrated into smart building systems to harvest energy from sources like ambient light, vibrations, or thermal gradients, reducing reliance on grid power and lowering carbon footprint.

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### Model of project :

