

IoT BASED E-VEHICLE CHARGING USING DUAL AXIS

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ABSTRACT

This paper is connected to charging E-vehicle module using the solar board, openness of most outrageous power is seen by IoT device and the best power delivered by the sun fueled is being followed using the LDR sensor. The whole course of action is related with the PIC microcontroller, the battery level, made and conveys a proportion of the battery is seen using the LCD. GSM modem is used to get a caution message for any abatement of power occurred in the system. An app which shows the graph to really take a gander at the availability status of voltage for every second with date and the worth of LDR sensor is shows in LCD. The essential idea of this paper is to diminish ozone exhausting substance surge and oil subsidiary.

Keyword : - IoT device, LDR sensor, PIC microcontroller, LCD, GSM.

I. INTRODUCTION

The interest for ordinary energy like coal, gaseous petrol, and oil is raised, so the specialists constrained towards the improvement of sustainable assets or non-ordinary energy assets. The impending year will come to an ever increasing extent sun oriented electric vehicle because of these reasons : (1)Reduction of discharge of petroleum product for extricating power from sustainable assets (2)intelligent consistence to electronic necessities that work with the observing the accessibility of utilized power utilizing IoT, and(3)tracking of sun's radiation over the course of a period. Electric vehicle limits the viewpoint of traveler a vehicle that draws current from the battery-powered battery. There are three sorts of electric vehicle: crossover electric vehicle (HEV), module mixture (PHEV), battery electric vehicle (BEV) and expanded range electric vehicle (EREV). The primary target of the paper is to give power from sun based PV cell to the moving vehicle which can be charged through the battery-powered battery and furthermore with the assistance of IoT, the accessibility status of the battery voltage can be observed.

II. LITERATURE SURVEY

[1] In this proposed structure here, the Arduino is utilized as regulator, the LDR sensor perceives the light and the servomotor slants the board as required. Moreover, the energy moved is dealt with in the battery for use. LCD show is similarly used to show position of the board and battery voltage.

[2] In this paper the craving for dependable power supply is the justification for additional examination into elective wellsprings of force. Albeit sunlight based following is definitely not another innovation, yet sun oriented gatherers actually endure low proficiency because of the irregularity of sunlight based insolation. Hence many savvy frameworks have been intended to augment sun based reapers. Among the frameworks is the double pivot sun oriented global positioning framework. For exhibit of the global positioning framework, a model was created as a model for an ordinary global positioning framework. It met its objective of following sunlight based irradiance and likewise reorient the payload in genuine time to the place of greatest sun powered insolation. Testing and perception utilizing the created model gave proof to the way that sunlight based trackers can build the proficiency of sun based reapers. The outcomes showed consistent sun based following for 6 hrs beginning from 9:00 am-3:15 pm. The responsiveness of the sensors permit the framework to track sun based insolation as low as 5 lumen. The whole framework was controlled by 5 volts which made it energy effective and can be run for minimal price.

[3] The fundamental reason for this paper is that today we are residing in a time where we want to utilize sustainable power however much as could reasonably be expected in light of the fact that step by step the contamination is expanding. So one of the most usable and productive environmentally friendly power source is sunlight powered charger or sun oriented energy. We have proactively seen a ton of sunlight based charger frameworks like static sunlight powered charger and sun following sunlight based charger. Sun global positioning frameworks are predominantly of 2 sorts, one is single hub sun powered tracker and double hub sun based tracker. Currently numerous papers has been distributed on various kinds of sunlight powered chargers and right now seen the most recent one is sun global positioning framework in light of microcontroller. In our undertaking we are attempting to make a sun following adaptable framework without microcontroller which can be less expensive than other sunlight based charger circuits in our methodology. We trust that this proposition of our framework can be productive in future. This paper proposes a sun based framework which can follow the sun utilizing the reference of two little sunlight powered charger and track the way by following the distinction of two voltages of two reference boards furthermore, moves the framework structure utilizing stepper engine.

[4] The point of this venture is that the exhibition of an Automatic Smart Sun Tracking System versus a manual Sun Tracking has been thought about in this paper. Lastly it has been demonstrated that the Automatic Sun Tracking has high benefit rate than the Manual Sun Tracking. Here likewise one-hub Solar Tracker strategy is utilized.

III. PROBLEM STATEMENT

- The Solar Tracking here is done in one-pivot that is from East to West or North to South however not every which way.
- Here the info is given physically utilizing PC program.
- We will need to research on the chance of utilizing the energy caught and changed over by the PV framework to charge the electric vehicle.

IV. METHODOLOGY

Hardware: Battery, PIC microcontroller ,Solar panel ,Voltage divider ,Relay board ,DC Motor, GSM, LDR.

Software : MP LAB, EMBEDDED C.

V. PROPOSED WORK

As a sun oriented PV cluster assumes an imperative part in an undertaking, the model just purposes LDR sensor to follow the situation for producing power from the source which makes a difference the consistent progression of energy. Since the shifting point of the sun changes from 0 degree to 180 degree , Initial two LDR sensors ought to be worked for either course i.e., one in the left what's more, other morally justified. One more two LDR sensor ought to be worked for one or the other course i.e., one in the up and other in the down. Then, at that point, the gathered electric source from the PV cell is moved to the battery which expands the power. The controlled consistent voltage is conveyed to a simple contribution of PIC microcontroller to stay away from the intricacy of the activity. The meter ought to serve to screen the consistent voltage. Program for controlling, conveying and showing the expected power yield supply can be stacked on it as follows from the simple to utilize PIC microcontroller PC program.

VI. BLOCK DIAGRAM

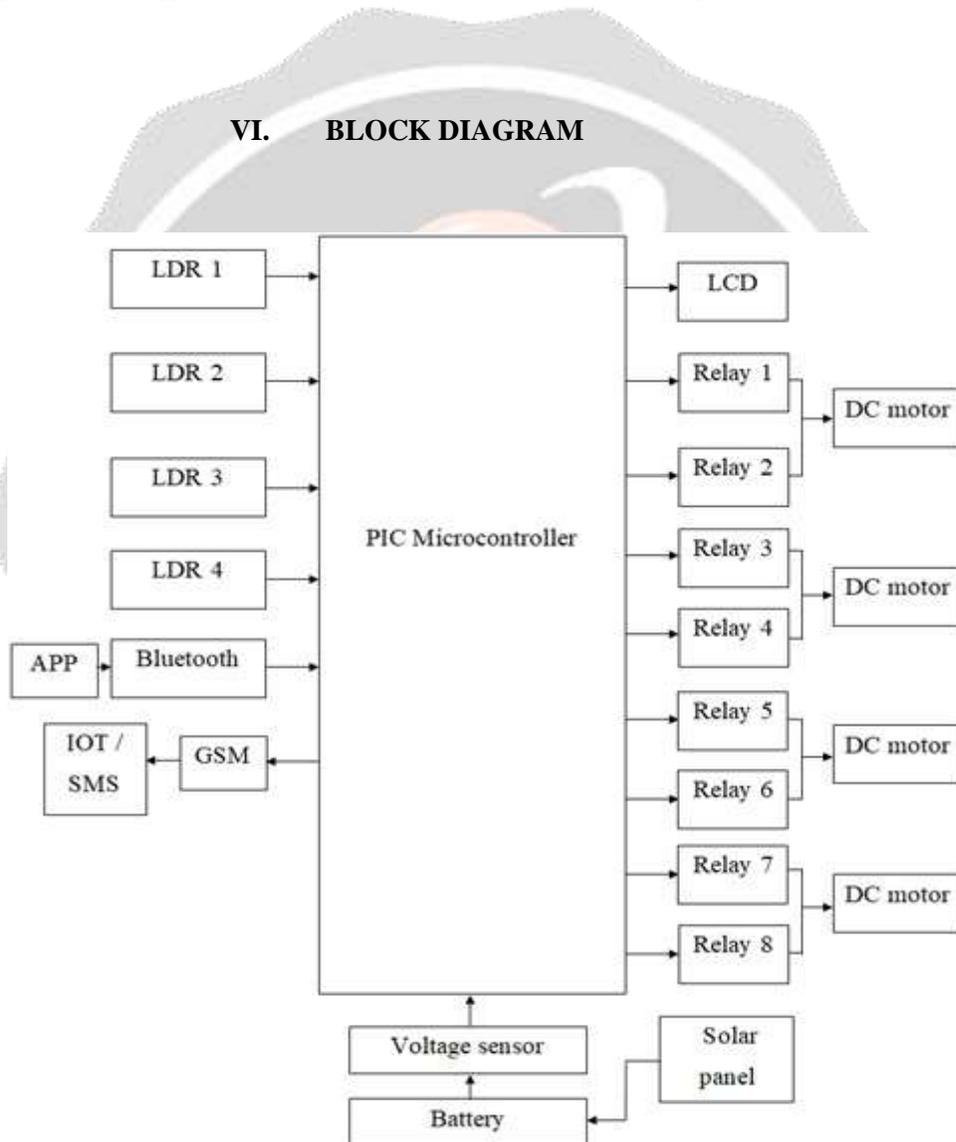


Fig.1 Block Diagram

VII. ADVANTAGES

- Following the sun and getting more power.
- Shrewd framework.
- Quick charging.
- Environmentally friendly power source from the sun.

VIII. APPLICATIONS

- It is utilized in moving vehicles.
- It tends to be utilized for any sort of vehicles and appropriately we need to change the battery.
- Batteries give almost steady voltage.

IX. RESULT

Our outcome would be that we get E-Vehicle which has an incorporated sunlight powered charger what's more, battery inside it. Thus we can get charged the vehicle at whatever point the battery diminishes. Through our model we could likewise get the battery level for each moment. What's more, subsequently by utilizing four LDR sensors that is the double pivot following we could get more productivity in our model. Contrasted with double pivot strategy, in the one hub technique the productivity is less.

X. HARDWARE SNAPSHOT

The hardware snapshot for the side view of the model is shown in the fig.2 and the top view of the model is shown in the fig.3.



Fig.2 Side View of Model



Fig.3 Front View of Model

GRAPH



Fig.4 SMS

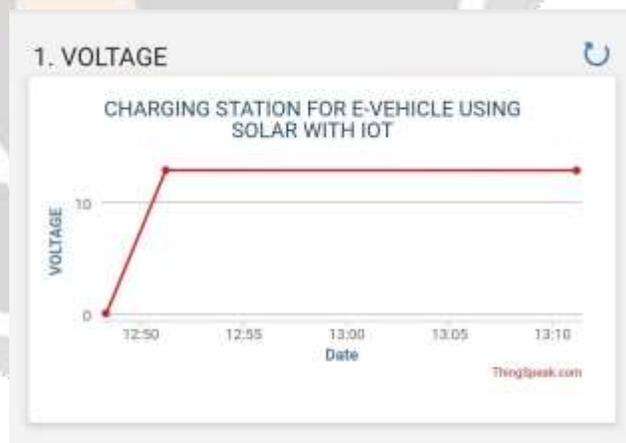


Fig.5 Plot Between Time and Date Vs Voltage

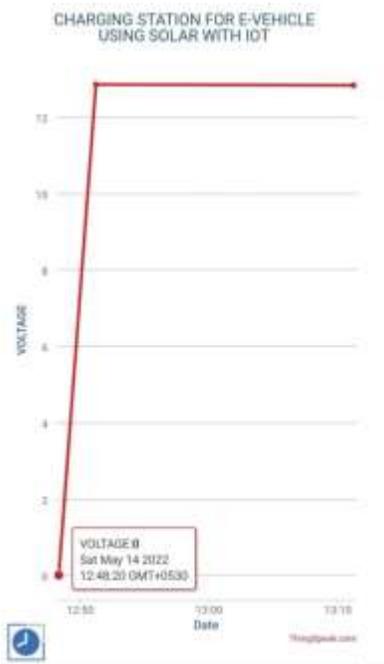


Fig.6 Plot Between Time and Date Vs Voltage

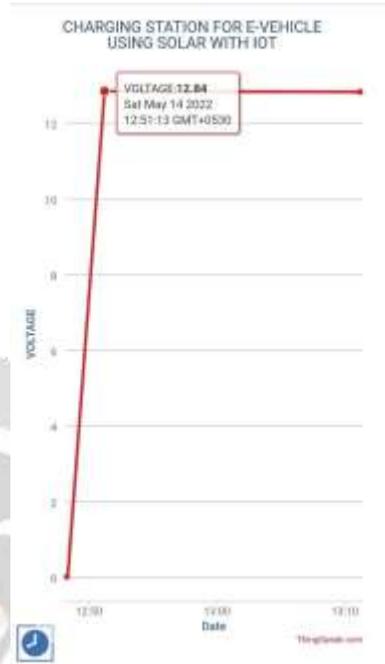


Fig.7 Plot Between Time and Date Vs Voltage

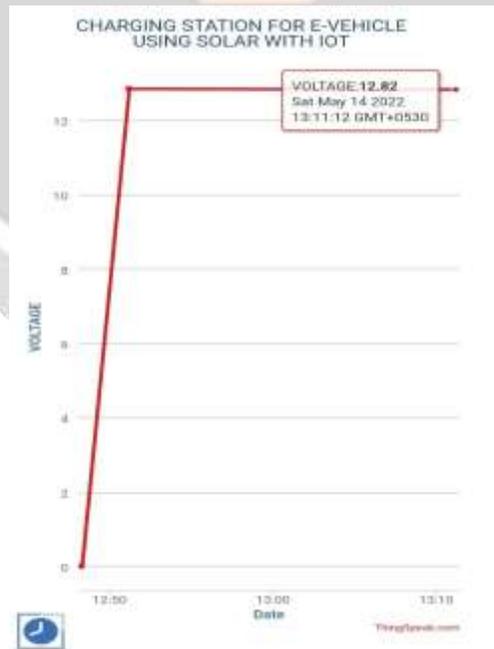


Fig.8 Plot Between Time and Date Vs Voltage

MOBILE APPS**Fig.9 Thingsshow****Fig.10 Bluetooth Controller****XI. SCOPE FOR FUTURE ENHANCEMENT**

Ecological contamination has arrived at practically the edge level in India. To relieve ecological issues, The Government of India chose to elevate E-Vehicles to diminish contamination. Best of all, aside from lessening ecological contamination, E-Vehicles can bring down oil import as well. Thus our plan would likewise add on extraordinary effect on the future climate.

XII. CONCLUSION

Internet of Things (IoT) based battery sensor screens the on going status of the battery as an energy stockpiling the board framework. The IoT created here utilizes a cloud stage for the board reason. The vehicle client can without much of a stretch charge the vehicle utilizing the sun oriented with double hub technique and the client can likewise see the battery voltage from the framework. The information put away in the microcontroller can endure until battery neglects to charge. At the point when the whole world is confronting shortage of petroleum and the gas cost are contacting the sky, Hybrid vehicles have come up as promising what's more, doable choice to adapt to the circumstance. For sometime later this sounds an incredible substitution.

XIII. REFERENCES

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