

Solar Battery Charging

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Abstract: *The Electrical necessities in India is increasing rapidly and power demand in been increasing. Nowadays, electricity is produce using fossil fuels such as coal, petroleum, natural gas and other conventional resources. It is not sufficient to satisfy the ever increasing demand of electricity in the world using this conventional resources, as this resources will get extinct in some years in future. The fossil fuel based energy sources are limited in quantity and also cause environmental pollution. Hence, there is need of alternative energy sources which will provide the sustainable energy. In this project we are generating electricity using renewable energy source like solar energy to charge batteries*

Keywords: Solar, Battery charger, Renewable Source, Portable

I. INTRODUCTION

The use of electricity is increasing rapidly in present era due to advancement in science and technology. The Gadgets such as mobile phones, smart watches, Laptops, etc. have become an integral part of our lives. And all these gadgets need to be charged after their normal use, for this we need electricity. But the demand of electricity increases the load on the various power generating power plants, which leads to more pollution because of the gases which are emitted from power plants. In addition to this there is also problem of electricity shortage leading to load shedding at many places. At some remote places there is no source of electricity. One of the best solution to all these problems is using a renewable source of energy for electricity generation. There are various different methods of renewable energy such as wind, tides and sunlight. Our project uses solar energy to produce electricity for charging batteries. It is a freely available source of energy and also it is environment friendly. It is available globally and many researches are going on in this field of solar energy generation.

II. LITERATURE SURVEY

In a project by Siti Amiley Jummat et al.[1] a portable case solar battery charger has been designed. This project consists of battery charger circuit and battery voltage level indicator circuit. This designed is easy to carry.

Md. Rakib Hasan, et al. [2] made a solar cap. The solar cap was constructed to charge mobile phones and other electronic devices. They have shown that solar cap or solar charger is portable and easy to carry, which is useful device at many places day and night.

Another project by Jyoti b. chamundeshwari [3] is design specification for efficient solar mobile charger. It works on photovoltaic principle with 6 volt output is developed.

A book Physics of solar cells by J Nelson is a comprehensive introduction to the physics of the photovoltaic cell. It is suitable for undergraduates, graduate students, and researchers new to the field. It covers: basic physics of semiconductors in photovoltaic devices; physical models of solar cell operation; characteristics and design of common types of solar cell; and approaches to increasing solar cell efficiency.

In this project we have made a Solar Battery Charger which stores a solar energy by converting it into electricity in a battery solar panel.

III. BLOCK DIAGRAM

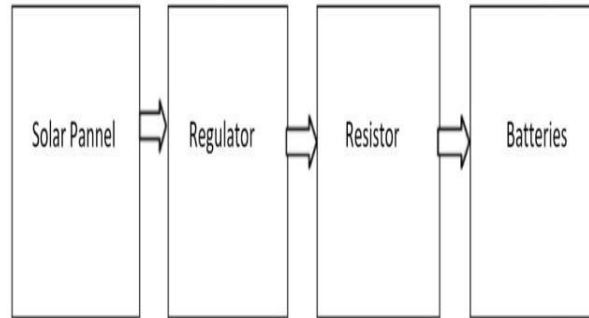


Fig. Block Diagram of Solar Battery Charger

IV. RESULTS



V. CONCLUSION

The main aim of this project was to use a renewable source of energy to produce electricity which can be helpful for the society. With the help of solar energy, a portable battery charger has been developed. By using solar energy, we can save electricity and also reduce environmental pollution. This project is having low maintenance cost which can be easily affordable to a common man.

If everyone of us use solar powered devices, the energy crises can be minimized. By going to renewable source of energy we are reducing the rate of consumption of non-renewable sources and are making this sources available to the future generation.

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REFERENCES

- [1]. Siti Amely Jumaat, Firdaus Mohamad, Shamsul Aizam Zulkifli, "Development of Portable Case Solar Battery Charger", in Electrical and electronic engineering, 2016, vol. 6(4), pp. 55-61.
- [2]. By M d . Rakib Hasan, Md . Sabbir Hossain & Kazi Pavel Rahman, "Design and Construction of a Portable Charger by using Solar Cap", Global Journals Inc. (USA), 2017, vol. 17(5), pp. 14- 18.
- [3]. Jyoti. B, Chamundeshwari, "Design Specification for Efficient Solar Mobile Charger", IJIRCCE, vol. 5, pp. 379-386.
- [4]. Physics of Solar Cells- A Text for Undergraduates, J Nelson.
- [5]. A Guide to Understanding Battery Specifications MIT Electric Vehicle Team" (PDF). web.mit.edu. December 2008. Retrieved May 10, 2017.
- [6]. "Recharger definition and meaning - Collins English Dictionary". Archived from the original on 30 November 2016. Retrieved 26 March 2017