

**Storable Solar Operating Mobile Charger**Mr. Darekar S.K.<sup>1</sup>, Mr. Mali S.G.<sup>2</sup>, Mr. Gawari Y.L.<sup>3</sup>, Mr. Tirandaj A.A.<sup>4</sup>, Mr. Patil A.S.<sup>5</sup><sup>1</sup> Mechanical engineering, Jaihind Polytechnic kuran, junnar<sup>2</sup> Mechanical engineering, Jaihind Polytechnic kuran, junnar<sup>3</sup> Mechanical engineering, Jaihind Polytechnic kuran, junnar<sup>4</sup> Mechanical engineering, Jaihind Polytechnic Kuran, Junnar<sup>5</sup> Mechanical engineering, Jaihind Polytechnic kuran, Junnar

**Abstract** — This paper contains implementation of mobile based on solar energy. With the existing push in the direction of sustainable, clean sources of power, it is no surprise that solar power has become one of the most popular alternative energy sources. Free and available everywhere, the power of the sun can be employed to power everything like cell phones. The sun's energy is usually harvested through solar panels they are made up of photovoltaic cells. These cells can convert the power into electricity that can be used for a number of purposes. This system can be more useful in rural areas which are suffered because of electricity problems. An alternative charger is also provided to charge the mobile by house hold general purpose 230V in the absence of the sun light.

**Keywords**— Mobile, Solar, Storable, Charger, Battery, Energy.

**I. INTRODUCTION**

Mobile phones are currently most popular for communication in all country in world. There are 5 billion mobiles are in use currently and numbers are growing. The chargers of mobiles can carry everywhere but it is not necessary that everywhere electricity will be available. During summer, the shortage of electricity arises and also in rural areas, hilly areas electricity is not available for charging. To defeat this problem of charging of mobile phones in public places, tourist places & especially in rural areas this system is proposed. However, the main problem is to average of phone battery is less than 10 hour with moderate usage. The newest technology of solar phone charger is separate device that uses a small solar panel to absorb light and transfer to phone. Our project goal is to develop the charging and storing the electric energy with the help of solar energy and give all mobile battery grow their battery life it is portable device any place where sunlight are present it works. Solar based multi mobile phone chargers is new business milestone because many people attending business conventions and forgetting their charger at home. Students and other people also use the public transportation system which can also require the chargers for their mobile phones. Its main advantage is this device mostly use in rural area. Where load shedding problem that place this device are used. These devices are very useful for customer for save their money and electric bills. This energy is also clean and produces no hazardous waste like some of the other power generation resources.

**II. LITERATURE REVIEW**

The conservation of energy from light into electrical the solar energy potential mathematical approach in determining efficiency and calculating the time for a battery completely charged just as law of conservation of energy cannot be created nor destroyed but can be only be transferred from one form to another. This is where the idea of solar energy came from the suns and sustainable energy from the human beings. After thorough review of the related literature it was found out that there are several studies about the energy efficiency of different types of cell phone charger. Application of mobile phone by solar energy includes intermediate storage battery as solar powered mobile phone charger. It is portable device such a cellular phone or electricity by concentrating solar energy to heat a Monaco mobile phone solar charger review yahoo Monaco mobile phone solar charge with battery pack review. There are also public charger for mobile phones which can be installed permanently in public places such as streets. The current market leader in efficient solar energy modules is sun power. Whose solar panels have a conversion ratio of 19.3% with Sanyo having the most efficient module at 20.4%. A whole range of other companies are emerging which are also offering new in photovoltaic modules, with conversion ratio of around 18%.

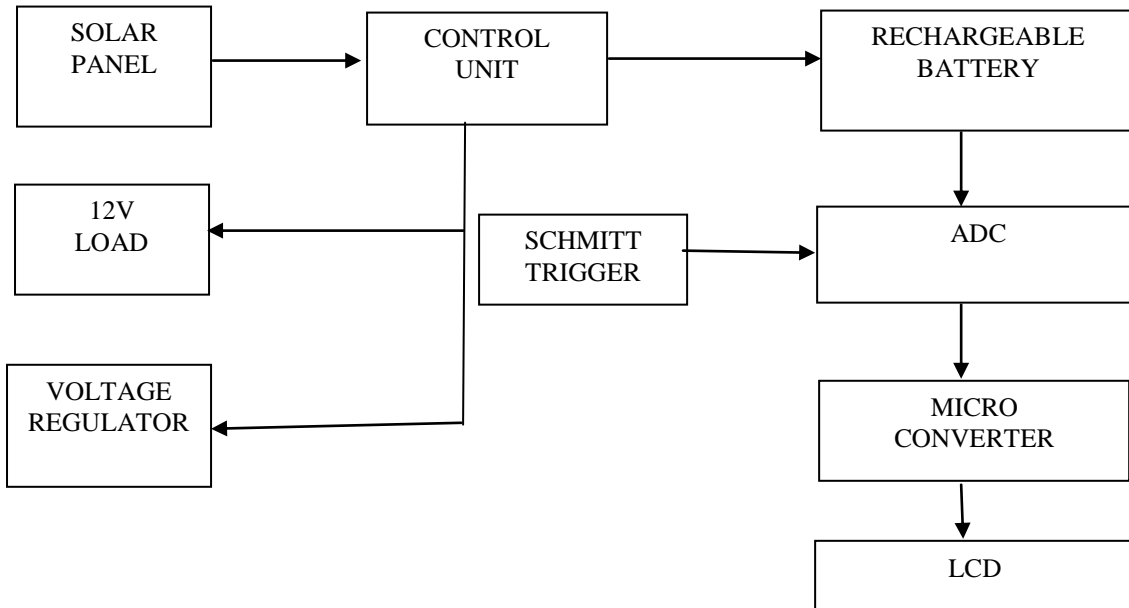
**III. ADVANTAGES**

- 1 Highly sensitive.
- 2 Low cost and reliable circuit.
- 3 Sensitivity can be adjusted.
- 4 We get solar energy directly from resources i.e. from sun.
- 5 Solar chargers also operate quietly and this does not contribute to noise pollution.
- 6 Relatively small size and can be used any where
- 7 It can be used in various applications and has a lot of features.
- 8 Light weight.

#### IV. DISADVANTEGES

- 1 Solar charger needs light to work.
- 2 Charging a device by solar charger is much slower than the main charger.
- 3 In case of cloudy climate, there would be no signs of sun and solar energy which is difficult.

#### V. METHODOLOGY



The block diagram of solar mobile charger consists of solar panel with control unit, fixed voltage regulators, rechargeable battery, ADC, Schmitt trigger, micro-controller and an LCD. The solar panel of 12V, 10W is used, the output of which varies based on the intensity of incident light. This output is regulated through a control unit and is stored in a battery. This battery produces an output of 12V which can be used directly to charge the load. The Schmitt trigger is used to converts the analog voltage across the battery terminals into digital. Micro-controller is used to display this charge on the LCD. The analysis of charge present in the battery is performed by scaling down the output of rechargeable battery (12V). The LCD displays the percentage of charge in the battery, and critical conditions in the battery (if the battery is full, low, etc.)

#### VI. WORKING OPERATION

Photovoltaic panels are used for converting the sunlight into electricity. When sunlight incident on the panel, sufficient number of photons from sunlight get absorbed by the PV panel. Then photon excites some loose electrons in the panel. In this way the positive and negative regions are created from which electricity is obtained. The energy generated by PV panel is used for charging the battery which is connected in the system. Sometimes the output from the panel is high and sometimes it is very low. If batteries are fully charged, then the supply from panels should be cut-off and if batteries are not charged at the rated level, supply to load should be cut-off. For these problems, charge controller is used to control the charging of battery and prevent it from over charging and deep discharging.

#### VII. CONCLUSION

From this system it is conclude that this whole system based on solar energy is effectively used for charging of mobile phones having low cost. This system can be used at any public place, tourist place and also in electrified areas. This system can be more useful in rural areas which are suffered because of electricity problems.

#### VIII. REFERENCES

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