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Wireless Phone Cover Charger Using Solar Energy

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Abstract: ***In this paper, completely different geometrics of a solar battery associated coil are realized by analyzing its practicality to get an optimum wireless phone cover charger. Wireless charging could be a terribly broader space of analysis and an amazing quantity of analysis is already been exhausted. However during this paper, we've got tried enquiring the choice approach for charging wirelessly that's charging through solar battery and coil by fixing it during a approach in order that it result for constant.***

Keywords: Solar plate; Rechargeable Lithium Polymer Phone Battery; Switch; Wireless charger; Charging Module

I. INTRODUCTION

Wireless phone cover charger is moreover known as Wireless force move, is an innovation that empowers the supply to transmit the electromagnetic strength to anelectrical burden via the air hollow without interconnecting ropes. This development is attracting avast collection of usages from a low pressure tooth brush to excessive energy automobile thinking of its solace and higher purchaser encounter. Presently a-days, this improvement is swiftly developing from hypotheses towards the standard segment of a business thing, if there should be an occasion of sharpcontraptions. Basically, the wireless phone covercharger makes use of solar strength to price itself, afterwhich deliver energy to the specific phone cover charge. Wireless phone cover charger makes use of induction coil, which generate flux and price the batteryof the specific charger.

A. Fundamental Principle Of Charging InWireless Phone Cover Charger

Wireless force circulate is procedure that's nearly like the crucial correspondence machine procedure. Force is haveto were moved from transmitter to the receiver via way ofmeans of utilizing diverse improvements or schemes (i.e.,coupling method, RF strategy) that's as like that of the message sign change from the transmitter to the receiver withinside the crucial correspondence machine wherein it's been applied diverse types of tweak plans that are applied to transport the message sign viably. In a truthful way to nation the Wireless charging improvements are justlike of stability plots withinside the correspondence systems.
Source power is the battery of the wireless phone cover charger which transmit its energy to the receiver system.

B. Block Diagram

The below block diagram shows how the system of wireless phone cover charger works: In this, solar plates act as a source of energy which generates the power of 6V. While the batteries gives outputthe system of 3.8V. There is an automatic cutoff is stabledin the system in case of full charged system. We have usedswitch as an operator which controls the flow of electricity.The below part of the block diagram shows the concept ofwireless charging.

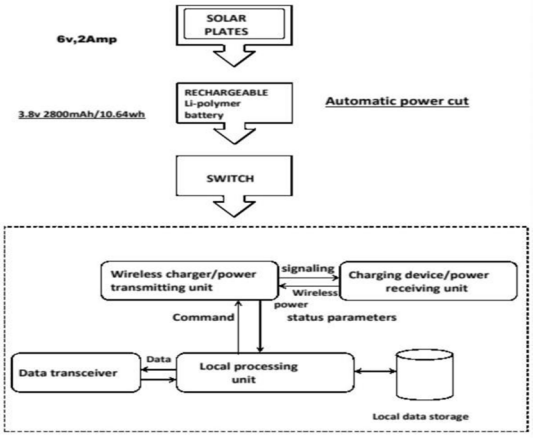


Figure 1(block-diagram)

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II. ENERGY CONVERSION EFFICIENCY

Wireless phone cover charger calls for electric strength tobe modified from AC to electromagnetic waves and in a while to Direct current. Every transformation consists of the misfortune withinside the well-known strength, which generally activates regular Wireless chargingeffectiveness drifting around half to 70%. This surprise ismain in Radiative and acoustic pressure flow advances wherein for radiative charging the effectiveness is round 70-75% and wherein it involves acoustic pressure flow theskill-ability is round 55-65%, this in mild of the reality thatthe electric strength want to head for extra level i.e., convert to mechanical vibration strength so the charging productiveness dropped by10%.

A. Literature Review

In this we discussed about different papers from where weget an idea. Basically, solar cell phone is a device which converts solar energy to electrical energy through solar panel and store that energy into a cell or battery [1]. We know that Faraday's law state that change in magnetic fieldproduces electric field [2]. While we also know that wireless charging power is transmits through air gaps mainly in mobile devices as well as many other gadgets [3]. In 2007 a research group from MIT made a remarkable achievement by lightning a 60W bulb while maintaining a distance of meters between the transmitter and receiver pads. also made a surety to increase the distance. After several efforts, researchers have improved the WPT with an efficiency of 96% [4].

B. Proposed Technique

In this we discuss about the working of the module and itspart. Solar panel work as the source of energy for the battery. It produces the energy of 6v each which charges the phone cover battery. Phone cover battery produces energy of 3.8v. This energy has been transferred to wirelesscharger. It converts DC voltage to electromagnetic force. This emf is used to charge the battery of the phone throughinduction coil.

III. COMPONENTS

A. Solar Plate

Attaching two solar plate in parallel to increase power. Single solar plate generate the power of 6V. It does not produce any radiation. It is not corroding as well as not having any dulge .

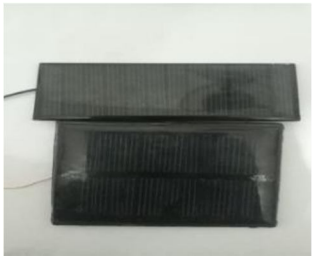


Figure 2(solar plate)

B. Battery (Each of 2800MAh)

To increase the power of battery we connect two batteriesin parallel. Its helps in working the system properly. Not excreting fluid or gases. Not having any bulk. Output of battery is 6V.



Figure 3(Battery)

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C. Indicator

It is directly connected to the battery. It shows the chargingpercentage of the wireless phone cover charger

D. Switch

It is used to connect the battery and wireless charger. It isused to discard the flow of power throughout the circuit.

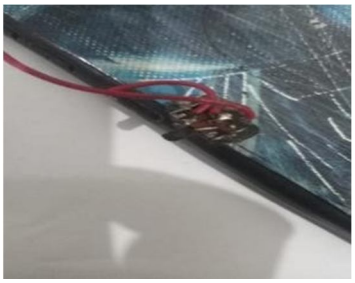


Figure 4(switch)

E. Wireless Charger

It generate the electromagnetic flux throughout the circuit.



Figure 5(wireless charger)

IV. CHARGING MODULE

The given module has two batteries which takes power from the solar panel. While there are two modes of charging one is through solar panel and another is through electricity. This module gives a 1-ampere charging current. Almost all of the digital gadgets run with batteries. And those batteries can get discharged. Therefore, chargers areused to fee them through placing electricity into them.

A. Charging Time

0 to 25 %= 37 min.
25 to 50 %= 1:15 hours
50 to 75 %= 1:52 hours
75 to 100 %= 2:30 hours

By analyzing the above timings, we have created a graph or a clear understanding of charging time.

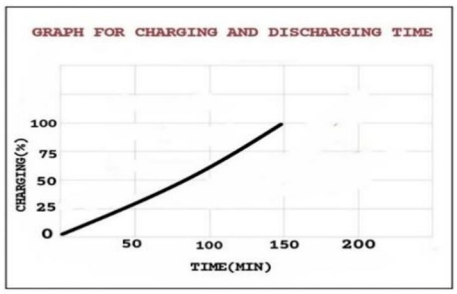


Figure 6(charging time)

B. Discharching Time

100 to 74 %= 37 min.
74 to 43 %= 1:15 hours
43 to 22 %= 1:52 hours
22 to -5 %= 2:30 hours

By analyzing the above timings, we have created a graph for a clear understanding of charging time.

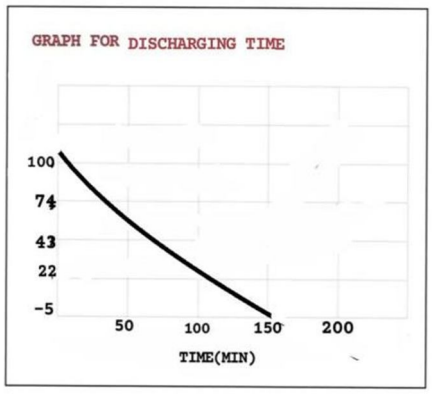


Figure 7(discharging time)

V. RESULT & DISCUSSION

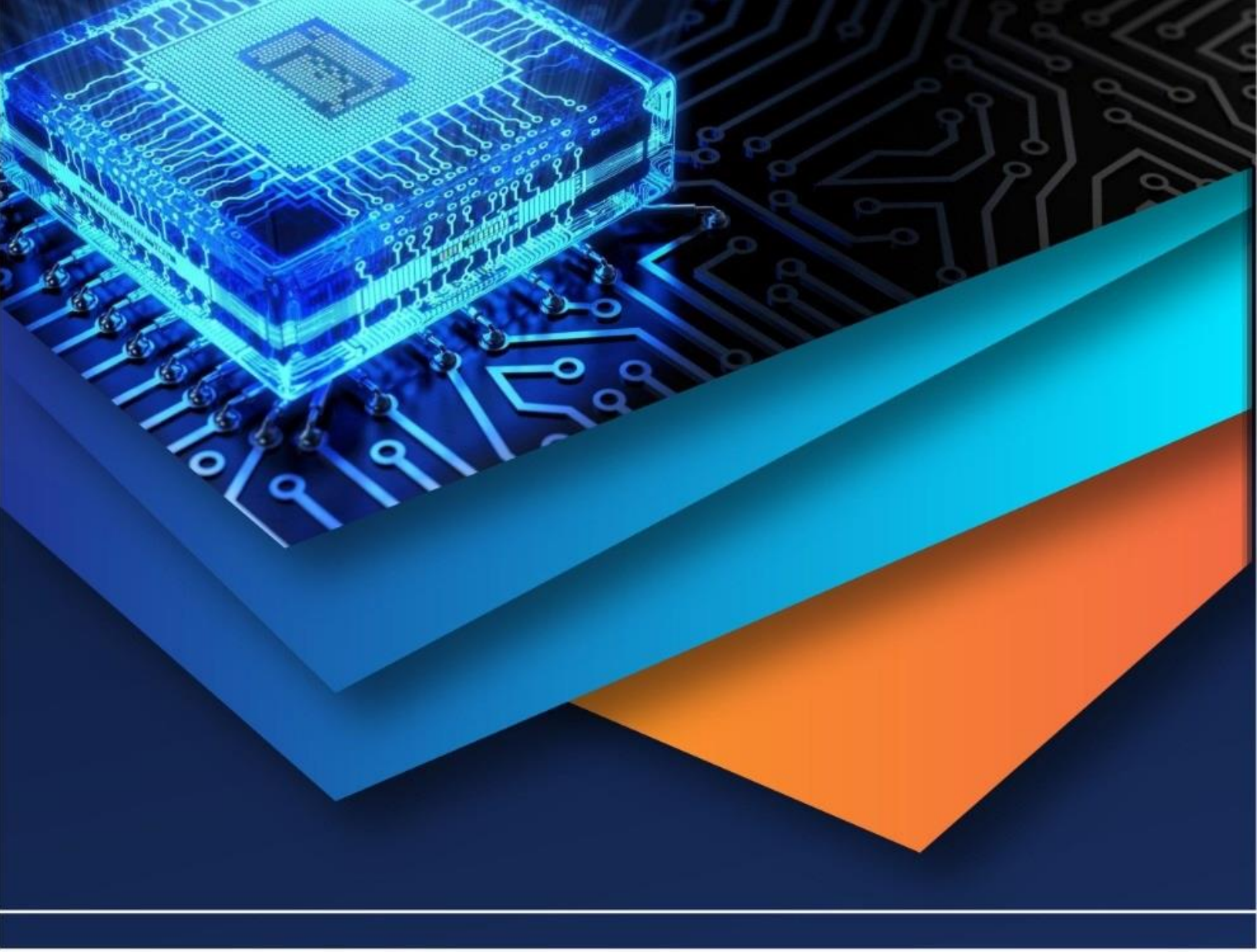
The research was conducted through stages as follows: This device has been designed in many building blocks: Attach mini solar plate, rechargeable lithium polymerphone battery to the wireless phone cover charger. Checking its physical behavior. Voltage drop across thedevice. Charge the battery through solar panel. Temperature introduced in the battery while charging. Setup all the components together in the given module. Introducing the current meter across the loop. Examine the circuit by providing electricity. Voltage drop across the battery after charging. Charging and Discharging time of the battery. Setup the switch which connects the battery tothe wireless charger. Setup Integrated circuits in thecharger. Introducing induction coil to generate fluxbetween the receivers and transmitter system.

VI. CONCLUSION

It was discovered from this research paper that the performance of the wireless phone cover charger using solar panel as the the source of energy, which can charge the phone with 5000mAh battery in 2.5 hours. We can also state an overview that wireless charging advanced the world of charging. The solar panel is used like an asset which can be beneficial for us and save energy upto an extent level. It is also viable for different types of batteries with different ports This promising innovation has fundamentally advanced during the previous decades and built up various easy to understand applications. While, theimplementation of solar panel has give us a new way of charging our phone's battery wireless.

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