

# AUTOMATICALLY CHARGE SMARTPHONES USING A LIGHT BEAM

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## Abstract

A smartphone plays an important role in human life. It runs many applications like games, video, data transfer etc. due to this smartphones are power hungry. To save the power and charge battery within minimum time. We propose a new system Automatic charging of smartphone using light beam. This is achieved by two techniques First, solar charging technique but use it in indoor spaces to remotely charge a smartphone using a light beam without a wire. Second is image processing based technique to detect and track smartphones for automatic smartphone charging.

**Keyword :** MATLAB, Arduino Uno controller, Camera, flashlight, ac motor

## I. INTRODUCTION

Automatic charging of smartphone is simply a method of charge smartphone wirelessly.

Today's smartphone include many hardware like multicore CPU, large screen, wireless network interface. They run applications like games, HD video. As a result lifetime of battery reduce and thus need charge smartphone every day or even multiple times of day.

In existing charger there is need to manually plug the charger into smartphone switch on button and monitor battery level.

Automatic charger is indoor charging technique that itself identifies a smartphone and start charging if battery is low. It uses technique of automatically track smartphone using image processing and charge smartphone using light beam without wire.

## II. RELATED WORK

Researcher group [1] presented that a system to charging the mobile phone anywhere without charger this is done by using microwave. The microwave signal transmit from transmitter using the special kind of antenna called slotted waveguide at frequency 2.45ghz. do this job sensor and rectenna circuit in our mobile phone required. The transmitter and receiver very powerful devices as the distance increases the charging is very slower. Wireless transmission of the energy cause some drastic effects to human body because of its radiation.

Researcher group[2] presented that non-conventional energy i.e solar energy for mobile battery charging. Solar charger are simple, portable and ready to use device which can be use by anyone in especially remote areas.

Researcher group[3] presented The wireless power transfer is implemented through the magnetic coupling between a power transmitter, which is connected to the grid, and a power receiver, which is integrated inside the load device. An innovative receiver architecture which heavily improves the power conversion efficiency is presented. A laboratory prototype of the proposed

wireless battery charger has been realized and tested to evaluate system performances. over the entire range of operating conditions the receiver efficiency lies within the 96.5

Researcher group presented [4] solar cell efficiency under the indoor environment using typical commercial solar panel. It indicate that within sunshine illuminated room or under direct light exposure from a lamp, power requirement for cell phone charging can be satisfied or provided to some extent.

### III. PROPOSED SYSTEM

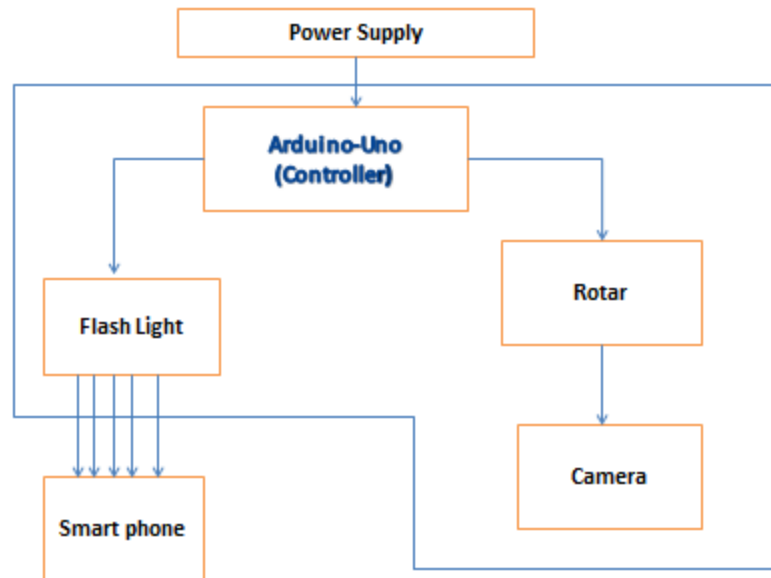


Fig. Block diagram of autocharger

The system consists of two parts: a light charger and smartphone. The light charger has four components. A light which generate a straight light beam. A camera which track a smartphone present in room, a programmable rotor which move the light and adjust their direction and a controller which controls the movement of rotor and turns the light on. The controllers also runs necessary software to analyze the image captured from the camera to detect smartphone, the smartphone must integrate a solar panel to harvest energy from the light beam of the light charger.

### IV. CONCLUSION

This prototype will help to charge smartphone automatically using light beam and results in high quality end product. Thus it will be User-friendly and detect obstacles for safe charging. Also reduce power and time required for charging smartphone.

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