



# WIRELESS MOBILE CHARGER WHICH WORKS ON MICROWAVES

**I.Hareesh<sup>1</sup>,G.V.L.Pujitha<sup>2</sup>,Shaik.Maneesha<sup>3</sup>,Thukka.Yashwanth<sup>4</sup>, T.Sailaja**

Student, Department of ECE, Audisankara College of Engineering and Technology(A), Gudur, AP, India.  
Student, Department of ECE, Audisankara College of Engineering and Technology(A), Gudur, AP, India.  
Student, Department of ECE, Audisankara College of Engineering and Technology(A), Gudur, AP, India.  
Assistant Professor, Department of ECE, Audisankara College of Engineering and Technology (A), Gudur, AP, India

## ABSTRACT:

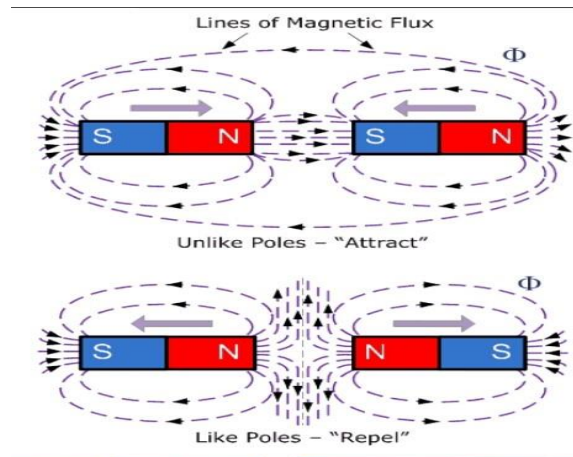
In Today's World Mobile phones are the heart of communication. So we have to charge the mobile phones numerous time it bothers a lot in today busy schedules. This paper proposed a proper idea to overcome this. This trouble would be solved with the help of Microwaves . Microwaves of frequency 2.45 G.Hz will be used here as a energy source which will charge Mobile phones with the help of a circuit which locates inside the mobile phones and this circuit will convert microwaves into the electricity. For the generation of microwaves of preferred frequency , a sensor will be used which convert the rotational energy into electrical energy and this energy will be given to the microwave generator. The rotational energy we obtained with the help neodymium magnets which can produce a high magnetic field. Small pieces of disc shaped magnets are mounted on a rotating machine which will also produce a magnetic field. Due to it a repulsive force will exist which causes the generation of torque and because of it fins will rotate Thus shaft of a DC motor will also rotate due to the rotation of fins which leads to the generation of electricity. this electricity is free of cost

## INTRODUCTION :

Many Papers published on wireless mobile chargers but this concept of charge the mobile phones with free energy is new one. So this paper present a concept that how free energy can be used for the fabrication of wireless mobile charger. The main advantage of this is it does not require any external power supply and there is no need to put our phone on any particular space while charging it. This paper focus a light on the concept of generation of current by the use of permanent magnets. The basic principle behind this power generation is "when any conductor is placed between the magnets which are facing same pole a torque will act on the conductor due to the repulsive force which leads to the rotation of conductor and because of it voltage is induced in the conductor." This induced voltage is not too high that it can produce microwaves of required frequency. Flyback transformer is used here to convert these induced voltage into much higher voltage and because of this voltage microwaves of desired frequency will generate. Microwaves will be transmitted with the help of antenna and a receiver circuit which consists of rectenna will receive it and convert it into DC power that is used for the charging of mobile phones

## WORKING PRINCIPLES:

### (A) Generation of free energy



**Figure 1 theory of magnets**

Magnets play a vital role in the production of free energy. Neodymium magnets are used for it (fig2) .it is a permanent magnet ,alloy of neodymium ,iron and boron. It will produce a magnetic flux of high strength. Some disc-shaped magnets of neodymium are placed on a rotating machine in such a way that all magnets produces magnetic field in the same direction(fig 3). For the rotation of rotating machine a considerable size magnet brought near the disc shaped magnets and because of same pole ,a repulsive force will act between the magnets (fig1). This repulsive force will produce a torque which will rotate the fins of rotating machine and due to its shaft of the DC motor will also rotate



Neodymium magnets



**(Figure 3)**



**(Figure 4)**

### (a.2) Working of motor

A DC motor consist of two parts -stator and rotor. Rotor is movable part while stator is stationary part. Rotor will rotate due to the torque. Torque will generate because of the interconnection between winding and magnetic fields. There are slots cut on the inner and outer circumference of rotor and stator in which conductors are placed .conductors are linked with each other and make a winding. Because of the rotation of shaft,winding cut the

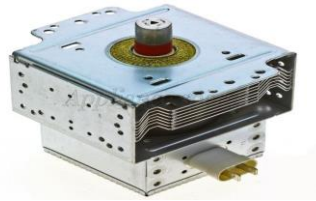
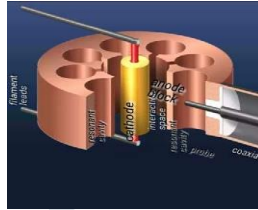
magnetic flux which is produced by the magnets and due to it voltage is induced. This induced voltage is dc in nature

### (a.3) Need of fly back transformer

The voltage induced by the dc motor is not so high. Magnetron need much high voltage for the emission of electron from the filament and flyback transformer will fulfill this need. Lower dc voltage is fed to one side of transformer. It will boost the induced voltage and frequency.

## (B) GENERATION OF MICROWAVES:

### (b.1) Working of magnetron



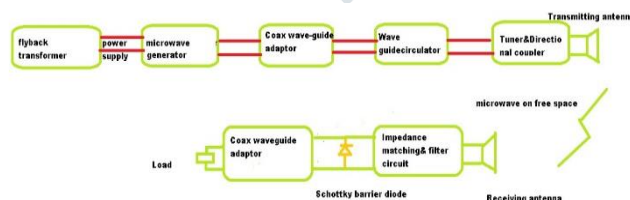
(Figure 5)

(Figure 6)

For the generation of microwaves frequency a microwave generator is used (fig.6). It consists of magnetron which is a vacuum tube. Magnetron consist of small cavities which resonates on it natural frequency. These cavities works generator filament emits electrons which move away from the cathode in radial direction but due to the magnetic as anode while the filament of the magnetron works as a cathode. A strong magnet is put between the magnetron (fig.5). Magnetron behaves as oscillator to produce microwaves. When induced voltage is applied to the microwave field they rotate in the resonating cavities . In these cavities electron emits its energy in the form of microwaves.

## (C) TRANSMISSION OF MICROWAVES:

For the wireless charging, generated microwaves should be transmit towards the receiver. For this work a transmitter circuit is taken in use which consist of coax-waveguide, tuner and directional coupler. Coax-waveguide helps in propagate electromagnetic waves of a particular frequency. Directional coupler couple a definite amount of power of microwaves in a transmission line to a port . It measures the power of microwaves. Tuner is used here for match the impedance of antenna and microwave source. At last microwaves are transmitted in space with the help of antenna.



## (D) PROCESS OF RECEIVING MICROWAVES:

A receiver circuit consists of rectenna and filter circuit . This circuit should be in our mobile phones. To convert the microwaves into direct current, rectenna is used which consists of a dipole antenna with an RF diode. Diode converts the ac power into dc power. Filter circuit rectifies the power so that it can be taken in use. Finally, this dc power is used to charge the battery of mobile phones.

**(E) WORK OF SENSOR:**

This circuit is used to check that whether mobile phones are properly getting microwaves or not. Frequency to voltage converter is used to on the rectenna circuit when mobile phone receives microwaves. LM2907 F to V is used for this purpose. The transmitted microwaves are of s band[5]. GSM can easily receive these microwaves. So when phone will receive microwaves signal it will charge.

**CONCLUSION:**

This paper spread a light on a great idea on wireless mobile charger with the concept of free energy. This wireless charger works on free energy so don't need to worry about electricity. There is no need to stay at any specific place while charging the phones. This charger is suited best than others because we don't have to pay any extra cost for electricity.

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