PERMANENT AND ELECTRO MAGNETIC GENERATOR

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Abstract— We know the process of power generation through windmill, thermal power plant in these power generation systems coal and water are the main power generation sources in our country and are non-renewable. In order to save resources which are available in nature solar and wind power generation systems were invented. In the same way, there is a great need to invent new methods to develop the power. So, here we are using magnets as the source to generate the power, in which the motor is propelled by the magnets (temporary and permanent). This generator will be having a stator and a rotor. The rotor disc is arranged with the permanent magnets and a shaft is screwed to it, which is further connected to generator dynamo through a pulley and above the rotor the stator is arranged like a casing which contains temporary magnets. The repulsive and attractive properties of magnets will make the shaft to rotate. Therefore, the magnetic energy will be converted to mechanical energy and the mechanical energy will be converted to electric energy by using a dynamo. For these types of magnetic generators heat is the big enemy, which reduces the magnetism of the permanent magnets. This can be eradicated by using temporary in stator. Where the temporary magnets can be excited by using the solar power

Index Terms-- Electricity Generator, Magnetic Generator

I.   INTRODUCTION

As we know the necessity of electricity, it very essential to invent new techniques for the power generation and it is better not to use the non-renewable resources like coal which we cannot retrieve back, releases harmful gases when it is burnt. Keeping all these in mind world has to come forward with new ways of power generation systems to make the environment green.

II.   METHODOLOGY

A.   Electricity Generation:

Electricity can be generated by rotating a coil of wire in a magnetic field. When the coil is made to move in the magnetic field, the electrons in the wire are made to move under the pressure. If the coil of wire is connected to an electric circuit the electrons under pressure will move in a certain direction and current will flow.
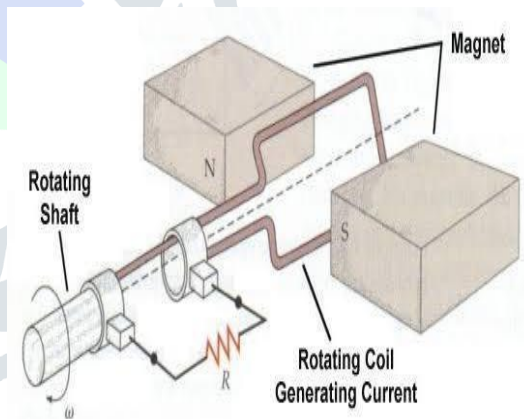

Fig. 1

B.   Electromagnetism:

Electromagnet can be made from the coil of wire which acts as a magnet when an electric current passes through it, but stops being a magnet when the current supply stops. Usually an electromagnet is wrapped around a core of ferromagnetic materials like steel, which enhances the magnetic field produced by the coil.

C. Working Principle:

Magnetic energy (repulsive and attractive forces) will be converted to mechanical energy(because of the repulsive and attractive forces, the rotor will rotate then the shaft connected to the rotor will also rotate) and the mechanical energy will be converted to electrical energy(by using a dynamo, electricity will be produced. And the power will be obtained in dc).

D. Working:

This generator consists of stator and rotor. Rotor consists of permanent bar magnets arranged in an order with the equal distant to either side of the magnets and is made to incline 30 degrees with the horizontal. Stator will be arranged with the temporary magnets which will be excited by using the solar power. Here we are using temporary magnets instead of paramagnets to avoid the loss of magnetization. When the heat dissipation more than the permanent magnets will lose the magnetization, to avoid that we are using temporary magnets in the stator. Due to the repulsive and attractive properties of magnets shaft will rotate continuously until the magnetic energy is strong. The motion of the shaft is further transferred to the electric dynamo via pulley. And the dynamo will give the dc power as the output.
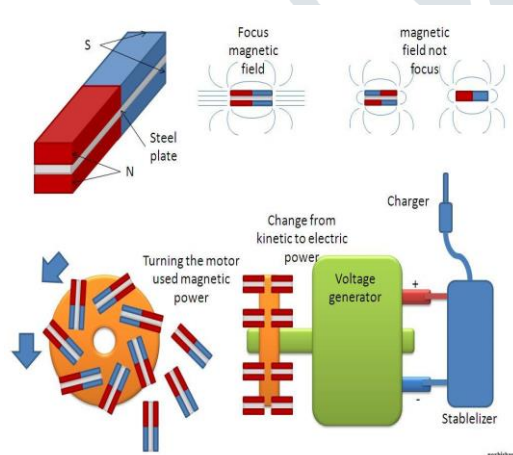

Fig. 2

E. Equations:

The strength of generator depends on:

L = Length of the conductor in the magnetic field
V = Velocity of the conductor(speed of the rotor)
B = Strength of the electromagnetic field
Electricity produced can be calculated by using
$(e) = B * L * V$
Power of the generator can be calculated as
$P = V * I$
Where
I = Current produced (amp)
V = voltage.

CONCLUSION

World is looking for new power generation systems. Day by day the power generating resources like coal is reducing but the most of the countries are depending on the coal for generating power. So, in this situation it is necessary for the man kind to invent new methods for producing electricity. In coming years this magnetic generators will be having more boom.

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