

Energy Production By Using Magnetic Flux

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Abstract— *Energy is basic need and Engineers are trying to invent new ways of generating energy .This paper proposes a technology to produces electrical energy using magnet repulsion technique .Now a days the production of electricity from various sources like wind,solar,tidal,hydro Etc. But these sources have advantages and disadvantages. So by using Permanent magnets like (Neodymium Magnets) are used as the source for production of electricity : the generator is added for the power generation and Spur gears are used to show the difference in rotation of shaft and production of energy in different shafts. Battery are taken to store the energy.*

Keywords— *Battery, DC Generator, Neodymium Magnets, Spur Gear*

A) Material Required:-

I. INTRODUCTION

Throughout the world, the electric power which is generated is based on well known Faraday law of electromagnetic induction (Mayank Grover, 2014). By using The permanent magnet generating electricity. so, it doesn't required any type of working fuel in order to generate electricity.

In order to produce electricity we need high powered magnets like neodymium Magnets which have high magnetic strength ,DC generator for the mechanical motion of the shaft to the electric energy, Spur Gear for showing the difference between the production of electricity between the gears And battery is used to store the electric energy.

II. MOTIVATION

We are running in the year 2019 which means in 21th centaury. Some rural areas in India as well as in other undeveloped countries are still facing problem in the scarcity of electricity and also for the people who are not able to buy invertors and batteries for their back up power. This experiment will make them happy . This will be of affordable price and it doesn't need any power to run and also eco friendly and green gadget.

III. CONSTRUCTION

The construction of the gadget is very simple. Let us see how its actually works:-

1. Neodymium magnets
2. Shaft of light weight in order to rotate at high RPM
3. Spur Gear
4. DC Generator
5. Battery
6. Thick and light material to make the body.

B) Why Neodymium Magnets:-

Neodymium magnets are very famous for their great strength and repulsive force. They are also called as the strongest earth magnets. Actually these are alloyed earth magnets.

We require this type of magnets which can exhibit high strength of magnetism, should have coercivity and should obey good remanent property, The repulsion force between the poles are very high.

In fact the price of these magnets are pretty much affordable comparing to other permanent magnets.

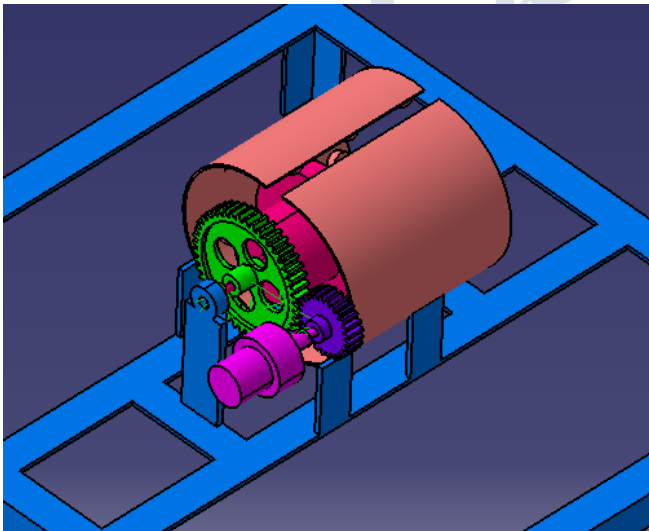
C) About Neodymium Magnets:-

A Neodymium magnets are also known as neo magnets. They have replaced other types of magnets in many applications in modern products that require strong permanent magnets, such as motors in cordless tools, hard disk drives and magnetic fasteners. Developed independently in 1982 by General Motors and Sumitomo Special Metals, neodymium magnets are the strongest type of permanent magnet commercially available.

The strength of neodymium magnets is due to several factors. The most important is that the tetragonal $\text{Nd}_2\text{Fe}_{14}\text{B}$ crystal structure has exceptionally high uniaxial magneto crystalline anisotropy ($H_A \sim 7 \text{ T}$ – magnetic field strength H in units of A/m versus magnetic moment in $\text{A}\cdot\text{m}^2$). This means a crystal of the material preferentially magnetizes along a specific crystal axis, but is very difficult to magnetize in other directions. Like other magnets, the neodymium magnet alloy is composed of microcrystalline grains which are aligned in a powerful magnetic field during manufacture so their magnetic axes all point in the same direction. The resistance of the crystal lattice to turning its direction of magnetization gives the compound a very high coercivity, or resistance to being demagnetized.

D) Construction:-

As I said above the construction of this gadget is very simple. The isometric view of the model is shown in the below picture.



ISOMETRIC VIEW OF THE MODEL

As in the figure the outer frame is made with the light weight material (hollow square rods) for the support and the overall weight and grip of the magnets and generator. The magnets are placed in the an angel that the repulsive force between the magnetic poles repulse effectively. The material used for the rotation of the shaft is the hollow cylinder it is made to rotate with the high repulsive forces of the magnet. When the repulsive force of the magnets are converted rotation force of the shaft with means the mechanical forces will be converted into electrical forces by means of DC Generator the shaft is directly connected to it. The different produced energy by the spur gear arrangement to the generator is measured and carried out and measured by the monometer. The

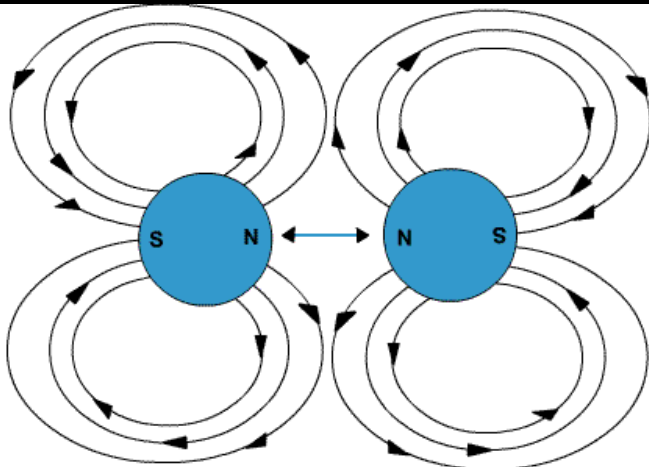
produced energy is stored in the battery and that energy can be used for the domestic purposes.

IV. WORKING

The permanent magnets placed on the circular disc which is connected by the shaft is also rotates the speed of the DC Generator. The same polarity of magnets which present in the shaft fixed with magnet is rotates due to magnetic repulsion. The repulsion between the two magnets makes the rotation continuously in the disc which is coupled with the larger spur gear through the shaft. The gear arrangement is made up of two gears. One is larger in size and another one is smaller in size. Both the gears are connected are meshed directly which serves in transmitting power from the larger gear to the smaller gear. As the power is transmitted from the larger gear to the smaller gear, the speed that is available at the smaller gear is relatively high. The smaller gear is meshed directly which serves in transmitting power from the larger gear to the smaller gear. The smaller gear is coupled with the DC generator which produces electrical energy. The power output from the DC generator is little more than the applied electrical energy. Then the output of electrical energy is stored in batteries or used to drive any DC loads through an charging circuit.

The repulsion between the poles in the magnets are shown in the below figure. As in the figure shows the like poles repel each other and the unlike poles attract each other. This the theory we are learning from our primary classes.

Fundamentally there is no difference between magnetic energy an electric energy. Any form of the energy can be transformed to another but the amount of energy is static magnetic energy works by utilizing the repulsive forces of the magnets. The magnets produce a magnetic field. A small amount of electricity is used to keep the magnetic energy and hence small amount of supporting backup energy is supplied using the battery power



Repulsion Between The Like Poles Of The Magnet.

Note:- (without continuous minimal backup power there is no energy produced from the magnetic field.) The shaft of the rotor is connected to the spur gear transmission system and hence the DC generator rotates and produces the energy which is supplied to the battery from the charging circuit. For demonstration purpose we have used the LED bulbs as a load so that we can show that the loads can be used for stored battery power.

V. FEATURES OF THE GADGET

If this type of the gadget or device is available in the market then the features will be listed below:-

- The maintenance cost will be low.
- It will be small in size.
- It is the green gadget.
- It can built or fabricated at low cost.
- Does not affect the environment in anyway.
- Can be more useful for the people in rural areas who are facing scarcity of electricity.

VI. CONCLUSION

The energy which is produced by using the magnetic flux is stored in the batteries and utilized for the domestic purposes. The system uses permanent magnets to produce repulsion and this repulsive force produces a torque which drives a DC generator to produce electrical energy. It is a nonconventional type of producing the energy. The existing source of energy such as coal, oil etc may not be adequate to meet the ever increasing energy demands. Since the model has only few modifications. Future scope of this work is to implement in industry to generated electricity by the rotational free energy available from rotating machines to electrical energy using repulsion magnet technique. The difference between the energy produced in both the gears which are driven by the DC generator are measured and calculated.

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