A Review on Generation of Electricity without Using Prime Mover

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ABSTRACT

The rotating machine is the most important think of industry. This rotary motion with some load can be use for free energy generation as a by~ product, This research paper proposes a new technology which is convert rotary free energy available from rotating machine to electrical energy using repulsive magnetic technique. The technology propose implies that the theory of magnetic repulsive process to utilize the free energy using DC generator. The system uses permanent magnet to produce repulsion and this repulsive force produce a torque which drives a DC generator. The repulsive magnet disc consist of two magnetic poles arrangements in which rotor is mounted in the rotating machine and it is coupled to the DC generator. During driving a load, the repulsive force between poles which is responsible for rotate the rotor so which forms the mechanical input for DC generator.

Keyword: Permanent magnet, Rotor, Shaft, DC Generator, Coupling.

1. INTRODUCTION

Electricity generation is the process of generating electric power from other sources of primary energy. The fundamental principles of electricity generation were discovered during the 1820s and early 1830s by the British scientist Michael Faraday. His basic method is still used today, electricity is generated by the movement of a loop of wire, or disc of copper between the poles of a magnet. For electric utilities, it is the first process in the delivery of electricity to consumers. The other processes, electricity transmission, distribution, and electrical power storage and recovery using pumped-storage methods are normally carried out by the electric power industry. Electricity is most often generated at a power station by electromechanical generators, primarily driven by heat engines fueled by chemical combustion or nuclear fission but also by other means such as the kinetic energy of flowing water and wind. Other energy sources include solar photovoltaic and geothermal power and electrochemical batteries.

Actually all we know that Levitation system, such modern technique is employed for power generation in world.

This technique is new invention of produce free energy with the help of repulsive type magnetic system for power generation. It is very effective technique and enough cost. This generated power can be used in more kind of application. This power is used for marine and military application. There for it's a important to they are design to be robust and efficient. Mostly in remote, rural areas and renewable energy application when inverter is failed then also available free energy is used.

2. MAGNETISM

Certain materials found in nature exhibit a tendency to attract or repeal each other. These materials, called magnets, are also called ferromagnetic because they include the element iron as one of their constituting elements. Magnets always have two poles, one called north; the other called south. Two north poles always repel each other, as do two south poles. However, north and south poles always attract each other. A magnetic field is defined as a physical field established between to poles. Its intensity and direction determine the forces of attraction or repulsion existing between the two magnets. Figures 1 and figure are typical representations of two interacting 2 magnetic poles, and the magnetic field established between them. Magnets are found in nature in all sorts of shapes and chemical constitution. Magnets used in industry are artificially made. Magnets that sustain their magnetism for long periods of time are denominated "permanent magnets." These are widely used in several types of electric rotating machines, including synchronous machines. However, due to mechanical, as well as operational reasons, permanent magnets in synchronous machines are restricted to those with ratings much lower than large turbine-driven generators, which is the subject of this book. Turbine-driven generators for short: turbo-generators take advantage of the fact that magnetic fields can be created by the flow of electric currents in conductors.

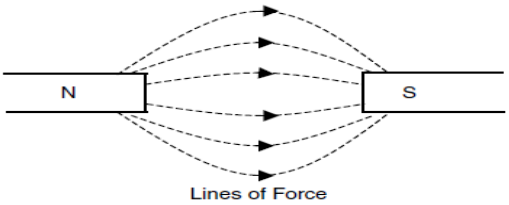

Fig. 1 Attractive force

Fig.1 Shows representation of two magnetic poles of opposite polarity, and the magnetic field between them shown as "lines of force."

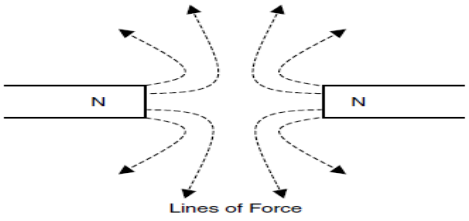

Fig. 2 Repulsive force

Fig. 2 Shows representation of two north poles, and the magnetic field between them. South poles will create similar field patterns, but the lines of force will point toward the poles.

3. MECHANISM FOR ROTATING THE GENERATOR SHAFT

The proposed technology employs the theory of magnetic repulsion to utilize the free energy. The system uses permanent magnets to produce repulsion and this repulsive force produces a torque which drives a DC generator.

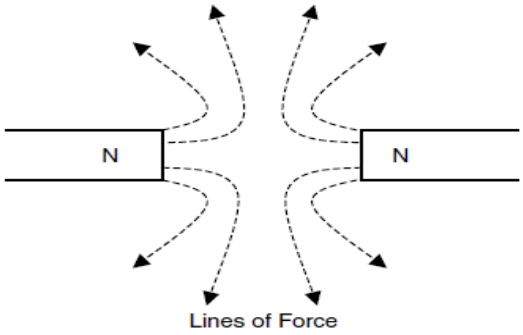

Fig. 3 Magnetic repulsive force

The two opposite parallel repulsive forces are use to rotate the rotor in between mechanism, the torque developed at rotor is depends on magnetic force due to high power permanent magnet and design of mechanism like hub, shaft, coupling etc. The torque requirement for rotating generator is more so that the high powerful magnetic power is responsible or design development of rotor on hub or its size its necessary to develop. The problem of chattering is due to the narrow band between magnetic limit and repulsion limit. This band is called safety margin. The problem can be solved by increasing the band, which can be achieved by bringing repulsion limit away from magnetic limit. This can be achieve by reducing Lorentz force and increase the force of attraction between contactors.

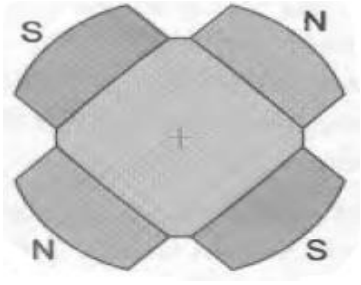

Fig. 4 Rotor arrangement on hub

Therefore in the suggested modification in the contact system of MCCB, the overlap length of contactors is reduced and next to lower contactor piece of U-shape magnetic material is placed. The Reduced overlap length of contactors reduces Lorentz force and by converting leakage flux between fixed and movable contactors in to linkage flux, piece of U-shape magnetic material applies force of attraction. In order to align the rotor exactly between the stators, a special bearing nut arrangement has been introduced. The bearing nuts, located at both ends of the shaft, make possible to change he rotor position inside the machine without opening the frame. This structure is suitable for purposes when the influence of the rotor misalignment on the performance of the machine is to be studied. Furthermore, considering the assembling of the machine, with the aid of the bearing nuts the stator and the rotor can be easily detached, if these parts snap together as it may happen accidentally during the machine construction. Both stators of the prototype machine were manufactured of fully processed electrical steel sheet using a laser cutting method and are fixed to the bearing shields by bolt joints.

4. CONCEPTUAL BLOCK DIAGRAM OF PROPOSED SYSTEM

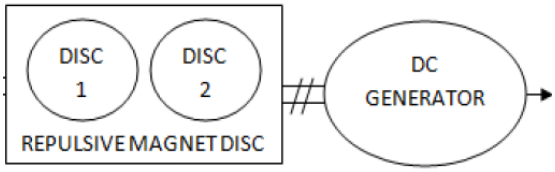

Fig. 5 Block diagram of proposed system

The machine drives any load this rotational energy can be used as a source of free energy for power generation as a by-product. For the generation of free energy a new technique known as repulsive magnetic technique is used. In repulsive magnetic disc the permanent magnet are placed in opposite poles which produce repulsive force. Here two discs, disc first is coupled with rotating machines and disc second is coupled with the DC generator. These two discs are separated by a small distance because; distance is inversely proportional to the repulsive force. The generated power from DC generator is fed to UPS system.

5. COUPLING

Single Flexing coupling

The single flexing coupling is for use in the case where shafts are supported by three bearings. The coupling shown in the diagram on the right above is suitable for use in cases subject to great radial loads. To connect the servo-motor used in NC machine tools with the ball screw, an exceptional usage of the coupling as shown in the diagram below on the right is possible. In this case, parallel misalignment is controlled by fitting the motor in a line with the casing; the coupling is used mainly for the absorption of angular and axial misalignment. This may overload the element; therefore, in this case, it is necessary to use a square element which absorbs misalignment, The single flexing coupling is designed to compensate for an angular misalignment of up to one maximum. It can operate at high speeds and under heavy loads while supporting radial loads. Typical installations include coupling of shafts, one of which is supported by bearings at two points and the other supported by only one bearing, as seen in motor generator sets. Maximum rotation speeds are based on rim stress with no consideration given to requirements for dynamic balancing. Values become linear when torque changes while within the zone of maximum allowable torque specified in this catalogue.

6. METHODOLOGY

This proposes technology to convert the rotational free energy available from rotating machines to electrical energy using repulsion magnet technique. The proposed technology employs the theory of magnetic repulsion to utilize the free energy. The system uses permanent magnets to produce repulsion and this repulsive force produces a torque which drives a DC generator.

simple experiments realizable by using easily found and low-cost materials allow students to explore quantitatively the magnetic interaction thanks to the help of an Open Source Physics tool, The static equilibrium of a 'column' of permanents magnets is carefully investigated by working on digital photos, while the an harmonic oscillations of a magnetic bar under the action of gravity and of magnetic repulsion are analyzed by using a digital video. A detailed comparison between theoretical expectations and experimental results is discussed. We discuss how the magnetic force falls off with the distance between the permanent magnets following an inverse power law. Static and dynamic measurements of the force and of the periods for small amplitude harmonic oscillations yield an experimental value for $p \approx 2$. The dynamical system is a good example of an enharmonic oscillator. The experiments need simple and inexpensive material to be realized and address a relevant topic in the physics curriculum; thus, they appear appropriate to be used in high school and undergraduate physics courses.

7. CONCLUSION

In this paper we conclude that the generation of electricity by using permanent magnetic repulsive force is possible for use the electricity at zero cost, by we have used the repulsive magnetic force for the rotating of shaft and this power through the coupling giving to the generator shaft and generate a electricity by avoiding use of costly Non-renewable sources. So we have save the atmosphere from major pollution through the burning of non-renewable fossil fuels.

REFERENCES

[1] T. Meenakshi, S. Sujithkumar, S. Suganya, "Electricity generation by employing repulsion magnetic technique in rotating machines",[e-ISSN: 2278-1676, p-ISSN: 2320-3331 PP 47-52] (2014)

[2] B. Denkena, D. Dahlmann, F. Floeter, T. Bruehne, "Conceptual design for electromagnetic guided rotary table in machine tools",[CIRP 24 (80 – 85)] (2014)

[3] Mahdi Zolfaghari, Seyed Abbas Taher, David Vindel Munuz, "Neural Network-based sensor less direct power control of permanent magnet synchronous motor",[Ain Shams Engineering Journal 7, 729–740] (2015)

[4] W.C. Hsu, C.H. Kangb, Y.W. Chen, T.N. Shiau, D.S. Liu, "design of axial-flux permanent-magnet low-speed machines and performance comparison between radial-flux and axial-flux machines",[ISBN 952-214-029-5, ISBN 952-214-030-9 (PDF), ISSN 1456-4491] (2014)

[5] Parviainen, "Dynamic Analysis of a Rotating Shaft Subject to the Double Cutting Force and Time-Varying Mass Effects of the Rod",[Procedia Engineering 79,316 – 396],(2005)

