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Research Article

HYPOTHETICAL ELECTRICAL GENERATOR BASED ON REAL ELECTRICITY GENERATION USING MOTION OF IRON BETWEEN TWO SETS OF PERMANENT MAGNET

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ABSTRACT

Two sets of permanent Magnets are kept fixed with a distance of four centimeters between them. An iron core coil fixed at the top connected to ammeter is placed in the distance between two sets of permanent magnet. Iron plate is moved between fixed coil and permanent magnets. The DC ammeter showed a deflection of 0.3 micro-amperes. The experimental results are used for a Hypothetical Generator. The hypothetical generator has two coaxial cylindrical permanent magnets fixed. Iron core coil is fixed to the inner side of outer cylinder. Small thickness iron plate is moved between fixed coil and upper side of inner cylinder to generate electricity. Instead of rotating permanent magnets small thickness iron plate is moved to reduce the input power of the prime mover.

INTRODUCTION

Engineers are in search of energy efficient systems. Conventional electricity generation is due to conversion of mechanical energy in to electrical energy. Recently permanent magnet synchronous generators are available in the market, where permanent magnet is rotated with the help of prime mover. Since permanent magnets are heavy weight large amount of prime mover energy is required. In this regard a new hypothetical generator is proposed to reduce the input energy of the prime mover. In this context instead of rotating entire bar magnet, small thickness iron plate is rotated which is placed between two sets of permanent magnets. For the validity of hypothetical generator an experiment is conducted where iron plate of 4*2*0.5 cubic centimeter is moved between two fixed permanent magnets and coil. The above experiment indicated 0.3 micro amperes in the coil. Since the air gap in a conventional generator is in the order of millimeters and the rotor is rotated at 1500 rpm, hypothetical generator having small air gap and high speed can produce same amount of electricity with small amount of input prime mover power of hypothetical generator when compared with input power of prime mover of conventional generator

Practical Experiment

100 micro ampere DC ammeter is connected to the coil. Five Permanent magnets each5*2*1 centimeter cube are placed at the front side and back side of the iron core coil with 50 turns. When iron plate is moved between fixed coil and fixed permanent magnet, 0.3 micro amperes is indicated.

Since iron is attracted by permanent magnet, optimal spacing of the iron is to be decided. Optimal spacing depends on flux of upper cylinder magnet and bottom cylinder magnet for the case of hypothetical generator.

Hypothetical Generator

The iron sheet cylinder between two permanent magnets is rotating. The eddy current induced is small because of small thickness of iron.

Inside of bearing is static load of inner cylinder permanent magnet. Outer of the bearing is rotating with small iron sheet cylinder. The small thickness iron sheet is having longitudinal air gap.

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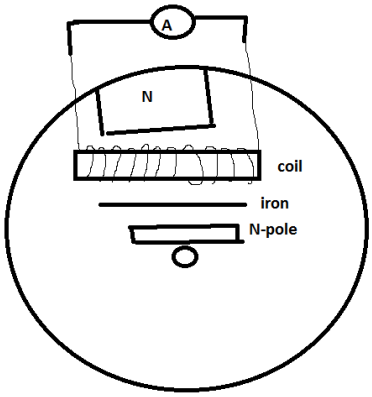

FIG1.HYPOTHETICAL Generator

In the generator top N-pole bottom N-pole, coil are fixed. The iron is moving.

For optimal generation N-pole dimensions at the top and bottom are to be calculated at the design stage so that iron is free to rotate and it is not attracted by N-pole at the top and bottom

In the figure1 N-pole at the top is outer cylinder
In the figure1 N-pole at the bottom is inner cylinder.
In gap between inner cylinder and outer cylinder small thickness iron is kept which is free to rotate with external prime mover.

Practical Experiment Details

Figure 2 coil connected to DC 100 micro ampere ammeter.-coil placed between two permanent magnets.

Figure 3 when iron plate is moved there is deflection in ammeter

CONCLUSION

Electricity is generated due to motion of iron between two fixed permanent magnets. Hypothetical generator is proposed based on the above fact

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