ELECTROMAGNETIC POWER PLANT BASE ON PERENDEV CONCEPT

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"I hereby declare that I have through this report entitle "Electromagnetic power plant base on perendev concept" and found that it has comply the partial fulfillment for awarding the degree of Bachelor of Electrical Engineering (Industrial Power) "

Signature	:	…………………………………..
Supervisor"s Name	:	PN. ELIA ERWANI BINTI HASSAN
Date	:	………………………………….

"I hereby declared that this report is a result of my own work except for the excerpts that have been cited clearly in the references."

Signature : ………………………………….

Name : NUR-AHMAD BIN MAZLAN

Date : ………………………………….

To My Beloved Mother And Father, Mariam Binti Abdul Ghani and Mazlan Bin Ahmad, my family and my supervisor, Pn Elia Erwani Binti Hassan.

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ABSTRACT

This project aims to built a power plant without any fuel sources in generating an electricity. The approach is base on Perendev concept known as PERENDEV MAGNETIC MOTOR. This motor use magnetic force in order to rotate the stator. Therefore, the arrangement of the magnet for stator and rotor must be in accurate position to make sure the magnet are not in 'stable' position and static. This PERENDEV MAGNETIC MOTOR is use as a turbine (in hydro power plant) and will connect to generator. Then, during rotating , the generator will produce an electricity. This power plant is mainly build to less the pollution and friendly environment. Besides that , this alternative will overcome the fuel crisis now days.

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LED	Light Emitting Diod
V	Voltage
A	Ampere
DC	Direct current
AC	Alternating current
PVC	Polyvinyl chloride

CHAPTER 1

OBJECTIVE AND SCOPE

1.1 Introduction

PERENDEV is a device that only use magnet force to make a continuously motion. The device have a 3 slide of magnet for rotor (as shown in figure 1.1), and a 3 slide of magnet for stator (as shown in figure 1.1). The magnet will arrange by angle 60° (as shown in figure 1.0). The device will continuously rotate when the rotor insert to the stator (as shown in figure 1.1).

Figure 1.0: Arrange magnet by 60

Figure 1.1 : 3 slide of magnet for rotor and stator

To make sure this device functional, the arrangement of magnet must be accurate. This device functional if it continuously rotate and this project is still under research & development

1.3 Objective

- To design the model of perendev device by using autocad
- To model the design into hardware and make sure it continuously rotate and have good enough force to rotate the mini dynamo.

1.3 Scope

The scope for this project is to build a mini model for perendev motor that use rare-earth permanent magnet and use only mini dynamo to produce the mili volt. This project will verify by using small load, such as LED, that connect to the output, where it can operate with small source.

1.4 Problem statement

The existing power plant use fuel such as coal, diesel and gas contribute to pollution that make global warming. This alternative will less the pollution and friendly environment, because this device did not use any fuel to produce an electricity. Now day's world are facing with a fuel cost crisis and fuel stock start reducing with this alternative it will overcome the fuel crisis now days, and the hole problem that related with fuel crisis will be solve

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Before start or modelling the project, the research about this project are explain as literature review. Below is the type of magnet, similar project and concept of magnetic field has explain.

2.2 Magnet type

Author: http://www.onemagnet.com/

Magnet has several types, in this chapter, 5 types of magnet will explain, the first types of magnet are:

- NdFeB Rare Earth Magnet

Figure 2.0 shown NdFeB, the third generation of rare-earth permanent magnet, has the high remanence, high coercive force, high-energy product and high performance/cost ratio, It is easily formed into various sizes and widely used in many fields such as aviation, electronics, instruments, meters, machine, medical instrument and the like. It is especially suitable for the development of high-performance, compact and light products. [3]

Figure 2.0 : Sample of NdFeB magnet

- Permanent - Ferrite Magnet

Figure 2.1 shown the Permanent-magnet iron oxide in made of SrO or Bao and Fe2O3 and is made by ceramic processing technology. Onemagnet have 6 models of Permanent-Magnet iron oxide products, namely Y10T, Y20, Y25,Y30,Y30BH, Y33, Y35 and etc, The products include rings, disks, blocks and segments. [3]

Figure 2.1 : Sample Permanent - Ferrite Magnet

- Plastic & Rubber Magnet

Figure 2.2 shown Plastic & rubber magnets are made of bonded ferrite magnet powder, compound rubber and other materials. By extruding, rolling or injecting, the combination can be made into soft, plastic and flexible magnets with different shapes such as strip, coil, sheet, and other complicated shapes. They are widely used in micro motor, fridge, disinfecting cupboard, toy, stationery, ad, etc. [3]

Figure 2.2 : Sample of Plastic & Rubber Magnet

- Alnico

Figure 2.3 shown the alnico magnet. Alnico describes a family of materials, which is derived from a common base composition comprising of aluminum, nickel, cobalt and iron with varying additions of other elements. By varying the composition it is possible to tailor the magnetic properties to meet the needs of a wide variety of end use applications. There are two different manufacturing processes for Alnico : Cast Alnico can be made into many sizes and shapes, whereas Sintered Alnico is usually restricted to smaller sizes. However, both processes lead themselves to complex geometries and configurations. Standard Sintered Alnico has tighter dimensional tolerances due to its processing. It also has slightly lowest reversible temperature coefficient magnetism in permanent magnet materials have excellent working temperature up to 600, Alnico products are widely used in all kinds of meters and other applications. [3]

Figure 2.3 : Sample of Alnico magnet

- SmCo

Figure 2.4 shown Plastic & rubber magnets are made of bonded ferrite magnet powder, compound rubber and other materials. By extruding, rolling or injecting, the combination can be made into soft, plastic and flexible magnets with different shapes such as strip, coil, sheet, and other complicated shapes. They are widely used in micro motor, fridge, disinfecting cupboard, toy, stationery, ad, etc. [3]

Figure 2.4 : Sample of SmCo magnet

2.3 Similar project

Author: http://www.fdp.nu/

- Roger Code

  Model by: Roger Cote
  Stator and rotor material: wood
  Stator magnet: Rare earth Permanent magnet
  Rotor magnet: Rare earth Permanent magnet
  Shaft: stainless steel

Explanation from Roger cote :

Through the use of three wheels with properly spaced magnets, the equivalent of one wheel with continuous or overlapping magnets depending on the size and spacing of the magnets. The wheels and outer stators have different numbers of magnets to prevent locking of the magnets. In the cases of the small and large motors, the number of magnets is 30 on the wheel , 36 stators and 17 on the wheel, 18 stators. This number is significant only in that it is in perfect timing with three wheels. The different numbers of magnets would work as long as there was the proper number of wheels to achieve timing. The wheel that spins freely within the stators. At this point there is equal pushing and resistance forces within the motor. To achieve propulsion the balance of pushing and resistance must be offset. This is achieved with the use of magnet shielding and angling the magnets. There are two types of magnetic shielding, one like a sleeve around the magnet, used to focus the magnetic field and the other, a half tapered ring placed on the approaching sides of the magnets. The shielding is simply the path of least resistance and so, pulls the field down on the approaching side in turn lowering the resistance side and offsetting the balance. The clearance between on coming magnets is an important factor as well. Figure 2.5 shown the Roger Code Model.[4]

Figure 2.5 : Roger Code model

- Mark Olson's

  Model by : Mark Olson's
  Stator and rotor material: wood
  Stator magnet: Rare earth Permanent magnet
  Rotor magnet: Rare earth Permanent magnet
  Shaft: Stainless steel

Explanation by Mark Olson's

They had been doing a bunch of testing of the Perendev motor to see if they can get it to work, and so far there have not had much success. They going through a huge learning curve with these magnets and it is very interesting. They have attached some photos of their work and they hope these came through with this email. They had a brain storm and thought they did try and build a linear motor with these 1" N48 magnets. The whole idea of the linear motor is that they thought it would be an easy way to test the Perendev idea. Well basically the linear idea didn't work at all. they noticed a tremendous down force when all these magnets. are repelling each other, which for sure impeded any linear motion. Then they went ahead and built a second linear "trolley car". This second one had much closer spacing. This one also didn't work. Figure 2.6 shown the Mark Olson"s Model.[4]

Figure 2.6 Mark Olson‟s model

- Xpenzif

Model by: Xpenzif
Stator and rotor material: Paper and perspec
Stator magnet: none (use screw)
Rotor magnet: Rare earth Permanent magnet
Shaft: Direct connected to bearing

Explanation by xpenzif

This motor uses magnetic attraction to spin. It is basically a cylinder with flat screws attached to the outside. They mounted this on a hard drive spindle. Four neodymium magnets line up with the four rows of screws. The magnets are attracted to the screws, but are attracted more to the heads than the tail ends. The head of a bottom-row screw will be attracted to the bottom-most magnet. So will the head of the screw above it. The cylinder will turn to compensate this imbalance. The same with the next two rows of screws. The lowest magnet now prefers the head of the next screw rather than the tail of the previous screw because magnet are attracted more to the thicker part or the screw. When they move the magnet close enough, the magnetic attraction makes it spin. This device is a very crude rough draft. The screw placement is off, and it doesn‟t rotate smoothly. This is a quiet, environmentally-safe, free-energy device. On a large scale it could be produce useful energy. Figure 2.7 shown the Xpenzif Model.[4]

Figure 2.7 :Xpenzif model

2.4 Magnetic fields

As early as 800B.c the Greeks discovered that certain kinds of stones exhibit a force that attracts pieces of iron. These stones are now called *magnetite* (Fe_3O_4) and the phenomenon they exhibit is *magnetism*. In the thirteenth century, French scientists discover that, when a needle was place on the surface of a spherical natural magnet, the needle oriented itself along different directions for different location on the magnet. By mapping the direction taken by needle, it was determined that the magnetic force formed magnetic-field lines that encircled the sphere and appeared to pass through two points diametrically opposite each other. These point, called the *north (N) and south (S) poles* of the magnet, were found to exist for every magnet, regardless of its shape. The magnetic-field pattern of a bar magnet is displayed in figure 2.8. It was also observed that like poles of different magnet repel each other and unlike poles attract each other. This attraction-repulsion property is similar to the electric force between electric charges, except for one important different: can be isolated, *but magnetic poles always exist in pair.* If a permanent magnet is cut into small pieces, no matter how small each piece is, it will always have north and south pole. The magnetic lines encircling a magnet are called magnetic-field lines and represent the existence of a magnetic field called *magnetic flux density* **B** [1]

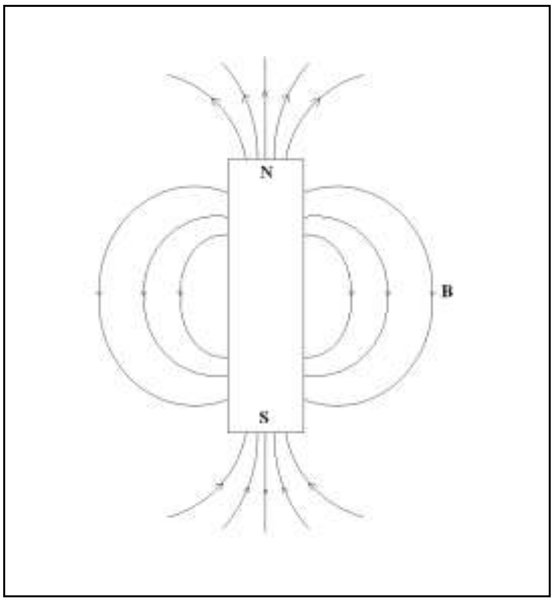

Figure 2.8 : Magnetic-field