

REVIEW OF VERTICAL AXIS WIND TURBINE FROM MAGNETIC LEVITATION

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Abstract:

As efficient upgrade this project prefers an advanced technique, Magnetic levitation for Wind Energy Power Generation. Maglev wind turbines have several advantages over conventional wind turbines. This make the efficiency of the system become higher than the conventional wind turbine. The maglev wind turbines will be operational for about 100years. Unlike the traditional horizontal axis wind turbine, this design is levitated via maglev (magnetic levitation) vertically on a rotor shaft. This maglev technology serves as an efficient replacement for ball bearings used on the conventional wind turbine and is implemented with permanent magnets. This levitation will be used between the rotating shaft of the turbine blades and the base of the whole wind turbine system. The turbine uses permanent type of rare earth magnets (NEODYMIUM), not electromagnets and therefore, it does not require electricity to run. This friction between the turbine blades and the base can be reduced significantly and thus produces maximum power output.

Keywords — Neodymium magnet, Mag-lev, vertical axis wind turbine, frictionless.

INTRODUCTION

This task in view of the usage of a substitute design of a breeze turbine for control age purposes. A vertical pivot wind turbine (VAWT) is acquainted by attractive levitation innovation with improve the execution. The framework use nature of lasting magnet as a swap for metal rollers to suspend the turbine part and accordingly limit vitality misfortunes while pivoting, which is the significant issue that looked by regular breeze turbine. The Maglev Wind Turbine is relied upon to convey wind control innovation to the following level. Furthermore, the

Framework can be suited being used for rustic and urban zones of low breeze speed districts. The outcomes acquired will be contrasted and the model of customary breeze turbine. For correlation we are utilize ordinary breeze turbine in our undertaking.

CURRENT TECHNOLOGY IN INDIA

Wind turbines change over the motor vitality of the breeze into mechanical power. This mechanical power can be utilized for a generator can change over this mechanical power into power, utilizing some apparatus component.

1. Wind turbine deliver 15-20 rpm (normal) in a day.
2. Utilizing gear 15-20 rpm is changed over into 50-60 rpm.
3. Then it will give to the generator.

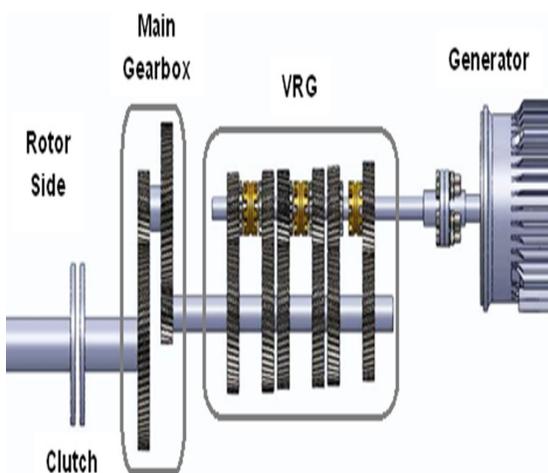
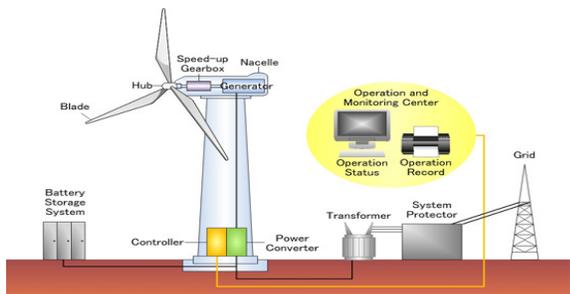


Fig. Magnet Implementation of Conventional Wind Power Plant.

MAGNETIC LEVITATION

Attractive levitation, maglev, or attractive suspension is a technique by which a protest is suspended with no help other than attractive fields. Attractive power is utilized to balance the impacts of the gravitational increasing speed and some other quickening. The two essential issues engaged with attractive levitation are

Lifting powers: giving an upward power adequate to check gravity.

Stability: ensuring that the system does not spontaneously slide or flip into a configuration where the lift is neutralized Magnetic levitation is used for maglev trains, contactless melting, and magnetic bearings and for product display purposes.

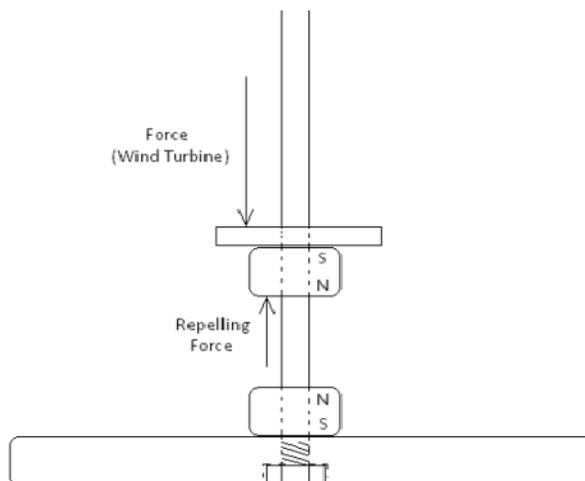
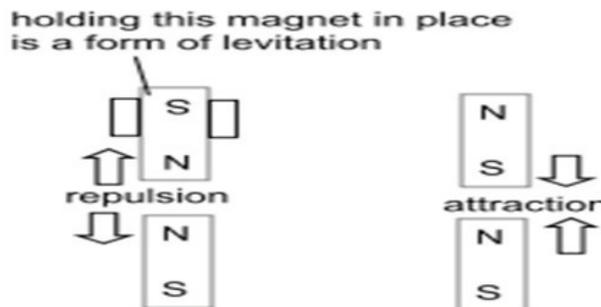


Fig.1 Same pole Neodymium magnet



MAGNET SELECTION

Some factors have to be compelled to be assessed in selecting the static magnet choice that might Be best to implement the magnetic levitation portion of the look. Understanding the characteristics of Magnet materials and also the completely different assortment of sizes, shapes and materials is essential. thus we have a tendency to get a magnet

that has all property that we have a tendency to needed (i.e. metal magnet)

Neodymium magnets are a member of the grouping magnet family and are the foremost powerful permanent magnets within the world. They are also referred to as NdFeB magnets, or NIB, because they are composed mainly of Neodymium (Nd), Iron (Fe) and Boron (B).

SUMMARY

This paper shows the arrangement of a part of an associated beautifully suspended vertical hub turbine. Utilizing the impacts of enticing aversion, winding shaped breeze rotary engine cutting edges are fitted on a bar for security amid flip and suspended on magnets as a trade for metal balls that square measure usually used on customary breeze turbines. railroading wind turbines have a number of

APPLICATION

1. It is very useful in rural area where load shading is very big problem.
2. It can also install on terrace of a very high building.

ADVANTAGES

1. It will give more speed.
2. Cost of gear is reducing.
3. It is friction less.
4. Its cost also reduce

CONCLUSIONS

Over all, the attractively suspended vertical pivot wind turbine was a win. The rotors that were outlined tackled enough air to turn the stator at low breeze speeds whereas .Keeping the concentration of mass nearer to the bottom yielding strength. The breeze rotary engine rotors and mechanical device suspended illicitly utilizing changeless magnets that took under consideration a sleek flip with unimportant erosion. At direct breeze speeds the facility yield of the generator consummated the determinations expected to provide the semiconductor diode stack. Finally the SEPIC circuit worked effectively and to the particulars that were slated toward the beginning of the circuit define. after testing the endeavor as a general framework we tend to found that it worked licitly nonetheless there feel restricted the live of energy it might yield.

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