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Free Energy Generation Using Flywheel

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***Abstract*: The Electricity is critical to fuel the economic growth of Nation. The global energy crisis has been aggravated by a lack of innovation. This work is introduced to reduce pollution and broaden access to energy around the world. The term Free-Energy generally means a method of drawing power from the local environment, without the need to burn a fuel. Free energy generator is a way to generate free energy Flywheel Energy Storage is a new concept that isbeing used to overcome the limitations of intermittent energy supply. Firstly, the requirement for an effective system needs to be a suitable flywheel with large in diameter.**

1. Introduction

A flywheel is a simple form of mechanical energy storing device. Energy is stored by rotating disc to spin about its axis. This energy is proportional to its mass and the square of its rotational speed. Flywheels are the primary load-bearing device inside flywheel power systems. The flywheel is commonly fabricated from steel or carbon fiber. Carbon fiber flywheels have a higher energy density due to the light weight and high strength. Steel, aluminum and composite rotors are an economical alternative to the carbon fiber rotor

2. Literature review

1. Self-Excited Induction Generator (SEIG) - A.K.Tandon et al., and Malik et al., [2][1987]:

In recent years, squirrel cage asynchronous motors are used as the electromechanical energy converter. The pri erate electricity. According to Tze-Fun (1888), an asynchronous motors called nciple of self-excitation applied to the asynchronous motors to gen as self-excited induction generator (SEIG), when a suitable capacitance is connected to across the stator winding of an induction machine and self-excitation occur under favorable conditions. SEIG is suitable candidate for electric generation applications, because they do not need external power supply to produce the magnetic field. According to D. Seyoum et al. (2000) permanent magnet generator can also be used for energy applications but they passes from non-controllable magnetic field, which decays over a period due to weakening of the magnets, and generated voltage tends to steeply decreasing load. The advantages of SEIG over asynchronous induction machine are very small size and weight, simple construction, absence of separate source for excitation, cheap and low maintenance cost.

2. Analysis of Flywheel- Sudipta Saha, Abhik Bose, G.SaiTejesh, and S.P. Srikanth [4] [2009]:

The importance of the flywheel design specification selection and its contribution in the energy storage performance. This contribution is demonstrated on the example cross-sections using computer aided analysis and optimization procedure. This Proposed Computer aided analysis and optimization procedure results shows that suitable design of flywheel geometry design could both have a significant effect on the Specific Energy performance and minimize the operational loads exerted on the shaft/bearings due to reduced mass at high rotational speeds.

3. Bedier B. EL-Naggar and Ismail A. Kholeif:
It had suggested that the disk-rim type flywheel for light weight. The mass of the flywheel is minimized subject to constraints sufficient moment of inertia and admissible stresses. The rotating disks of uniform thickness and density is applied to each disk and the rim is not dependent on suitable condition at the junction.

Suitable boundary conditions of centrifugal stresses are applied. The dimensional ratios and design specification are obtained for minimum weight. It is proved that the required design specification is very close to the disk with uniform thickness.
Akhilesh Barwahe, Amrendra Kumar, Ankit Domde, Deepak Dhakad, Manish Kumar Dhadse, Vishal Wankhade has worked on electricity generation using flywheel— Flywheels have been under consideration to be used for energy storage purposes. In developing countries like India, with rapid growth in the economy, the demand for electricity is also increasing. With the rising demand for reliable, cost-effective, and

environmentally friendly energy storage, the Flywheel Energy Storage System FESS is quickly coming into its own. This study presents an analysis which shows that using an FESS is a promising alternative in mitigating energy storage problems in decentralized electricity generation projects where an uninterrupted power supply UPS is required. An electrical machine is used as a motor to store kinetic energy when the solar energy is available, and then the stored energy is converted back to electrical energy by running the machine as a generator when the solar energy is no longer available. Flywheel Energy Storage systems FESS using advanced technology have come up as a promising alternative to the traditional electrochemical battery. The amount of energy storage depends on the mass, flywheel shape, and rotational speed of the rotor.

3. Working

In traditional method of water supply system, for agriculture, industrial sector unnecessary motor is continuously rotated and because of this more electricity is used and overall electricity bill of every sector is increased. In proposed system uses flywheel which gives extra rotation of motor and also extra water is lifted without using electricity. So, we have decided to introduce free water lifting using flywheel.

Above block diagram gives the simple flow of working in which simply the flywheel and the water pump is connected to the motor shaft. The shaft size is 1inch and material is MS. The flywheel and motor is coupled through law jaw coupling. Then basically we used Arduino for the purpose of ON and OFF the motor for a specific time interval. Then whole assembly is mounted on the angle frame.
If the 1 Phase AC supply is given to the 0.5hp motor, it starts rotating and lift the water through the water pump, at that time flywheel which is fitted on the same shaft rotates with high speed and stores the energy due to its inertia and in this manner free energy is produced by using this energy we easily lift the water.

4. Calculations

Input Power
Here we used 0.5 HP Motor
I/p=0.5*746
=373 watt.
Consider if the 0.5HP motor is run for 1 hour in every house.
Then, energy consumption

1. for 1 month
   30*373=11190 watt
   =11.9 unit
2. for 6 month
   180*373=67140 watt
   =67.14 unit
3. for 12 month
   360*373=134280 watt
   =134.28 unit

If the 0.5 motor runs with the flywheel then we save 10sec per 1 Minute. Then according do this we save 10 minutes per hour.
Then, energy saved

1. For 1 month
   5*373=1865 watt
   =1.8 unit
2. For 6 month
   6*5=30
   30*373=11190 watt
   =11.19 unit
3. For 12 month
   12*5=60
   60*373=22380 watt

=22.38 unit

Consider 50 motor in one village then,
Energy consumption saved,

1. For 1 month
   50*1.8=90 unit
2. For 6 month
   50*11.19=559.5 unit
3. For 12 month
   50*22.38=1119 unit

- Electricity Charges per unit

Unit	Rate
0-100	3.6 Rs
101-300	7 Rs
301-500	10.63 Rs
500+	12.6 Rs

- Cost saved by one motor analysis
  1. For 1 month
     1.8 unit *3.6 Rs=6.48 Rs
  2. For 6 month
     11.19 unit*3.6 Rs=40.28 Rs
  3. for 12 month
     22.38 unit*3.6 Rs=80.56 Rs
- Cost saved by 50 motor in 1 village analysis
  1. For 1 month
     90 unit*3.6Rs=324 Rs
  2. For 6 month
     559.5 unit*12.6 Rs=7049.7 Rs
  3. For 12 month
     1119t*12.6 Rs=14099.4 Rs

5. Applications

- Agriculture:

  In traditional method of water supply system, for agriculture, industrial sector unnecessary motor is continuously rotated and because of this more electricity is used and overall electricity bill of every sector is increased. In proposed system uses flywheel which gives extra rotation of motor and also extra water is lifted without using electricity.
- Water pump house:

  In the pump house the drilled wells and drinking water, are facilities containing pumps and equipment for pumping water from one place to another place this system is very useful it uses free energy to lift the water and it saves the cost.

6. Conclusion

We have obtained more electrical output which is our free energy. This system have produce extra electricity by using of flywheel from 0.5HP motor. Hence through this methods free energy has been utilized for agriculture purpose, and also for pump house. The main advantage of Free energy generator using flywheel is that it can generate energy without used of any extra equipment and this free energy generation is non-hazardous and environmental friendly.

7. References

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