"Magnetically Levitated Solar Motor"

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Abstract:

The project featured here focuses on a motor design that integrats the foundmental concept of D.C. motor and a magnetically levitated support system to produce unique application of renewable energy.

Electromagnetisum in carporates the science of electric and magnetic field.The force associated with magnet generates a magnetic field. Electric field and magnetic field are innately related.For example, the movement of magnetic field generater an magnetic field.D.C. Motor are electric motor that are driven by direct current and utilise the principle of electromagnetisum to generater the rotational movement of it's shaft.

Introduction:

This motor is a magnetically levitatin solar motor. Design the part of the motor building each part of the measurement, then assembling the part into a final document. We will intoduc to measureing and cutting with a hand saw. When the base and upright are cut , they then use the router table to cut grooves into the base. The upright is butt jointed to the base then a little ight sanding followed by a few coats of. Duringthe periods thet the base is being polyurthane, student make the rotor block using a special jig for the router table. The block is 2 inches long, 1 * 1 with quarter inch grooves on each corner. Next the measure out 250 foot length of wire by wrapping it on a 1 foot length of magnet wire by wrapping it on a 1 foot panddle.

Wrapping the motor with the magnet wire carefully wrapping the wire in the grooves around block 100 times. The wire is then lable and confirmed with continuty tester. Solar cell are placed of the block and opposite side are soldered to each other front to back. End of wire is connect to solar cell.

Motor is ready for assembly & testing. Glue mirror to the upright & then put ring magnet into the grooves. The magnet need to be South Pole facing in you determine the polarity of the magnet.

Next is the balancingthe rotor. If rotor is out of balance, it will not have enough energy to lift the heavy side, so it will not spin on it own in the light. The balancing the rotoe half turn & letting it go. When you let the rotor go, it will probably settle down consistntly with the heavy side down. Add enough to make it balanced, but not so much that the over comensate. When balance is right put into light, Incandescent light works. If it does not work, check the mendo troubleshooting guide. Get the motor running right & bit should spin on its own whenever it is in the presence of sun light.

Literature review:

I have learnt topic about the solar system. The reference that I get is base on the reference book, journal, internet, technical paper from IEEE. All of these references assist me much in understanding the concept and technology.

Methodology:

An engaging way to introduce students to the concepts of electromagnetism, dc motors, and renewable energy is to show them the prototype version of a motor that incorporates these concepts then have them work in teams to analyze and design an improved version.

This motor, like DC motors, requires that the current flowing through the coil reverse itself every ½ rotation. The solar cells attached to the armature automatically reverse the current in the coil as it rotates.

Solar cells are attached to the opposite sides of the armature so that when one side is illuminated, current will flow in one direction and when the solar cell attached to the opposite side rotates to the top is illuminated, it causes current to flow in the opposite direction.

Project Development:

First the select the project title. And consider the specification of material, collect material for resistance, capacitor, battery, MOSFET, IC etc. and solar plate, winding wire, magnet etc.

Conclusion:

"This motor is produced very little torque, but due to its friction less support it has the potntial to spin at a very high number of rotations per minit"