

# Gravity Light Using Perpetual Rotary Motion

C. Mahesh<sup>1</sup>, S. Madhavan<sup>1</sup>

<sup>1</sup> Student, Department of Mechanical Engineering, Paavai Engineering College, Pachal, Namakkal.

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**ABSTRACT:** We live in modern world but there are still areas which have limited or no supply of electricity. Most of this area is located in mountains where we cannot provide electricity generated from tidal, hydroelectric, thermal energy by grid connectivity as they are situated in very remote places. They still depend on kerosene lamp which we consider as obsolete. So how to provide electricity in such places? You might think of solar or wind energy. But the problem with solar energy is it varies from places to places which are same with wind energy. So, we've to think a better alternative to get rid of this question and which is also viable. Here Gravity comes into picture. Our idea is to use the concept of bicycle dynamo electricity generation. The only difference is we're going to use gravitational pull instead of pedal work. The overall setup of gravity light can be operated indoor just by using perpetual rotary motion which is rotates the generator to generate a light. The gravity light requires only initial investment and no running cost. The cost of gravity light is approximately equal to the cost of kerosene required to light lamp for 3-4 months after this span it saves money.

**KEYWORDS:** DC Motor, Electricity Generation, AC to DC Converter, Gravitational Energy, Perpetual motion machine

## I. INTRODUCTION

Electricity is one of the basic needs without which development is not possible. Numbers indicate an estimated 1.2 billion people – 17% of the global population – did not have access to electricity in 2013, 84 million fewer than in the previous year. Many more suffer from supply that is of poor quality. More than 95% of those living without electricity are in countries in sub-Saharan Africa and developing Asia, and they are predominantly in rural areas (around 80% of the world total).

In such areas people still use kerosene lamp, biomass which is expensive and pollutes atmosphere. Kerosene lamps are hazardous to health and environment and constantly require

replenishment. Fumes which are raised from the burning of biomass fuels can cause cataracts and eye infections as well as emitting smoke that is the equivalent to smoking two packets of cigarettes every day. Also it is estimated that yearly almost 2.5-3 million people suffers severe burn due to kerosene. So to provide lighting in such areas is a key challenge. The problem with other renewable energy sources like solar, wind energy is, they vary from location to location and they are based on weather conditions.

So we thought of new alternative. Here gravity comes into play. The proposed model of gravity light doesn't require any other form energy except gravity, like perpetual rotary motion using iron balls. Unlike solar and wind power gravity light remains operational in any climatic condition and all day.

[1]. **Perpetual motion** is the motion of bodies that continues forever. A **perpetual motion machine** is a hypothetical machine that can do work infinitely without an energy source. This kind of machine is impossible, as it would violate the first or second law of thermodynamics.

These laws of thermodynamics apply regardless of the size of the system. For example, the motions and rotations of celestial bodies such as planets may appear perpetual, but are actually subject to many processes that slowly dissipate their kinetic energy, such as solar wind, interstellar medium resistance, gravitational radiation and thermal radiation, so they will not keep moving forever.

Thus, machines that extract energy from finite sources will not operate indefinitely, because they are driven by the energy stored in the source, which will eventually be exhausted. A common example is devices powered by ocean currents, whose energy is ultimately derived from the Sun, which itself will eventually burn out. Machines powered by more obscure sources have been proposed, but are subject to the same inescapable laws, and will eventually wind down.

In 2017, new states of matter, time crystals, were discovered in which on a microscopic scale the

component atoms are in continual repetitive motion, thus satisfying the literal definition of "perpetual motion". However, these do not constitute perpetual motion machines in the traditional sense or violate thermodynamic laws because they are in their quantum ground state, so no energy can be extracted from them; they exhibit motion without energy.

[2]. An invisible force that pulls objects toward each other. Earth's gravity is what keeps you on the ground and what makes things fall. An animation of gravity at work. Albert Einstein described gravity as a curve in space that wraps around an object—such as a star or a planet.

Gravity is most accurately described by the general theory of relativity (proposed by Albert Einstein in 1915), which describes gravity not as a force, but as a consequence of masses moving along geodesic lines in a curved spacetime caused by the uneven distribution of mass. The most extreme example of this curvature of spacetime is a black hole, from which nothing—not even light—can escape once past the black hole's event horizon. However, for most applications, gravity is well approximated by Newton's law of universal

gravitation, which describes gravity as a force causing any two bodies to be attracted toward each other, with magnitude proportional to the product of their masses and inversely proportional to the square of the distance between them.

[3]. Gravity is very important to us. We could not live on Earth without it. The sun's gravity keeps Earth in orbit around it, keeping us at a comfortable distance to enjoy the sun's light and warmth. It holds down our atmosphere and the air we need to breathe. Gravity is what holds our world together.

However, gravity isn't the same everywhere on Earth. Gravity is slightly stronger over places with more mass underground than over places with less mass. NASA uses two spacecraft to measure these variations in Earth's gravity. These spacecrafts are part of the Gravity Recovery and Climate Experiment (GRACE) mission.

Gravity is the force by which a planet or other body draws objects toward its centre. The force of gravity keeps all of the planets in orbit around the sun

## II. EXPERIMENTAL SETUP



First arrange the equipment's like AC to DC converter and battery inside the stand the close the stand. now fix the synchronous motor at the top of the stand with shaft and connect the perpetual rotary motion machine to the shaft and connect the motor to the converter using wire

The full assembly needs to be in straight line, perpendicular to the base. Mark their places and glue them in place for additional strength you can also screw it from this side. now we need to put the "U" brackets over the bearings and screw them tight. Now put glue on the outsides of the bearings so that the shaft does not slip or side. Now put shaft

of the motor into the tube and then let the motor rest on the block. Glue the shaft inside the tube as well as the motor to the block of wood. Now put the LED light anywhere you want, I have glued it in the front.

Connect the AC to DC converter to the battery then connect the converter to the synchronous motor when the perpetual motion machine rotates the shaft that rotates the synchronous motor it will produce the ac current. Then the current pass to the converter the converter converts the AC current to DC current then DC current passes through the battery and battery stores the DC current. When the light blows the converter

convert the DC current to the AC current then pass to the light.



**Internal connections and output of light**

### III. COMPONENTS USED

#### 3.1 PERPETUAL MOTION MACHINE

To prepare a perpetual rotary machine we need one plastic round box and then by using protector we need to split into 8 even parts of having 45 degree then using plastic plates we split the

plastic round box into 8 parts then by using glue gun paste the plates in the marked areas . now place the iron balls in the areas the close the round box using plastic plate. And then I placed a iron balls inside the box then I closed the box using plastic plate.



#### PERPETUAL ROTARY MOTION MACHINE

#### 3.2 AC TO DC CONVERTER

An AC-DC Converter is a device that converts an AC voltage to DC voltage. The output from the motor is AC current. This AC current will convert into DC current using AC to DC converter



### 3.3 BATTERY

Battery is a device which is used to store the DC current from the AC to DC converter



### 3.4 LED LIGHT

An **LED lamp** or **LED light bulb** is an electric light that produces light using light-emitting diodes (LEDs). LED lamps are significantly more energy-efficient than equivalent incandescent lamps and can be significantly more efficient than most fluorescent lamps.



### 3.5 SYNCHRONOUS MOTOR

A synchronous electric motor is an AC motor in which, at steady state,[1] the rotation of the shaft is synchronized with the frequency of the supply current; the rotation period is exactly equal

to an integral number of AC cycles. Synchronous motors contain multiphase AC electromagnets on the stator of the motor that create a magnetic field which rotates in time with the oscillations of the line current



#### IV. CALCULATIONS

After assembling the parts according to the procedure using the accurate dimensions and finally connect to the perpetual motion to the chain. It will rotate the clock wise direction constantly and shaft connected to the motor also rotates with the help of iron balls. When the motor rotates the bulb start blowing constantly without any damage and increase the speed of motion machine .

##### Power and Efficiency Calculations:

- Mass required in kg : 0.8kg
- Distance it falls: 0.8 ft(80 cm)
- Time it falls: 0.30 min

#### V. CONCLUSION

Though heavy load increases the voltage and current of synchronous motor but it decreases the lighting time of LED. Applying heavy load, it may cause transporting problem. So a suitable mass must be used to fall it as much long time as possible. Renewable energies are currently looked at as the sources which will meet the future energy requirements. Solar, Wind, Tidal, Geothermal are some popular examples of renewable energy sources. Yet these sources have their own unique geographical as well as other limitations and are not available throughout. But gravity is available across our entire planet. Thus we can use something like electricity from gravity on a large scale to generate electricity any time at any place. Gravity light will be able to replace Kerosene Lamp and other obsolete lighting mediums. Also it will provide renewable, sustainable and cheap alternative to conventional lights. The impact will be beneficial for the social, health and economic situations of end users. With gravity light installed

- $0.8 \times 9.81 = 7.848 \text{ N}$  (weight or downward force)
- $7.848 \text{ N} \times 1 \text{ m distance} = 7.848 \text{ J}$  (joules)
- $7.848 \text{ J} / (36 \text{ minutes} \times 60 \text{ seconds/minute}) = 0.003 \text{ W}$  (watts)
- The measured voltage and current while the lights were lit.
- Current: 15 m A (0.015 amps)
- Voltage: 12 volts
- Power = current x voltage = 0.015 amps x 12 volts = 0.18 watts
- Comparing the two,  $(0.18 \text{ watts} / 0.003 \text{ watts}) \times 100 = 60\%$  efficiency

in each one of these homes eliminates the hazards of kerosene lamp, biomass which in turn improves environment, health and also reduce greenhouse emissions.

#### SOME OF THE ADVANAGES FROM THE ABOVE RESULTS

- a) They can be easily transfer where ever we want
- b) The cost of the entire a project is low
- c) It doesn't required any running cost only initial investment is enough
- d) They are small in size and weight
- e) The output from the synchronous motor is high.
- f) Power and Torque increase
- g) Does not required electricity to operate

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