© 2019 IJSRST | Volume 6 | Issue 5 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technology
DOI : https://doi.org/10.32628/IJSRST196522

# Free Energy Generation Using Flywheel

**Mohammed Asif Kattimani#1, Mohammed Ashafaque Inayath#2**

[1]Assistant Professor, Department of Mechanical Engineering Lords Institute of Engineering and Technology, Hyderabad, India

[2]Research Scholar, Department of Mechanical Engineering Lords Institute of Engineering *and* Technology, Hyderabad, India

## ABSTRACT

The aim of our project is to generate free energy using flywheel. A mains motor of two horsepower capacity is used to drive a series of belt and pulley drive which form a gear-train and produces over twice rpm at the shaft of an alternator. The intriguing thing about this system is that greater electrical output power can be obtained from the output of the alternator than appears to be drawn from the input motor. This is done with the help of Flywheel. The gravity wheel or flywheel is coupled with the gear-train in order to produce more excess energy or free energy. Detail study is done with various parameters of flywheel to obtain the maximum free energy out of the system.

**Keywords :** Motor, Flywheel, Alternator, Bearings, Shafts, Pulleys, Belts.

## I. INTRODUCTION

The term Free-Energy generally means a method of drawing power from the local environment, without the need to burn a fuel. There are many different successful methods for doing this and these methods span many countries and many years. The amount of power which can be collected can be very high and the few kilowatts needed to power a household are most definitely within the reach of most of the devices mentioned.

Free energy means zero cost energy. Mechanical energy which drives windmill or Solar energy in solar cell which is converts into DC current other energies obtained are from wind power, water power & telluric power. Free energy generator is a process to generate these types of energy. Free energy suppression is the notion that corporate energy interests intentionally suppress technologies that may provide energy at very low cost. Other remaining untouched forces of nature which are well familiar in the scientific literature include earth batteries, atmospheric electricity, telluric currents, and pressure system changes. The energy from perpetual motion is considered fantastical forces. These devices utilize quantum vacuum energy, quantum vacuum perturbation, rotating magnets and purported methods to crack hydrogen.

Free energy suppression is the notion that corporate energy interests intentionally technologies that may provide energy at minimum cost. All other remaining untouched forces of nature which are well familiar in the scientific literature, which includes earth batteries, atmospheric electricity, telluric current and pressure system changes.

Nikola Tesla once said that, all people should have energy sources for free. There is electricity everywhere present in limitless quantities and can

drive the world's equipment without the need for gas, coal or oil.

Free Energy generally means a method of drawing power without fuel to be burnt from the local environment. There are many different ways for doing this. These ways span many years and countries. The amount of power which can be obtained can be very high and the few kW needed to power a household are most definitely within the reach.

The bottom line is that energy can definitely be drawn from the local environment in sufficient quantities to supply all of our needs. For whatever reason, conventional science appears determined not to accept this basic fact and denies it at every opportunity. It seems likely that vested financial interests are the root cause of this refusal to accept the facts. The true scientific method is to upgrade scientific theory in the light of observed fact and new discoveries, but the true scientific method is not being followed at the present time.

## II. LITERATURE REVIEW

S.U.Maji , M. S. Mane C, Kshirsagar, A. Jagdale, D. Malgar has worked on free energy using flywheel. This Paper deals with the concept of free energy and its generation using flywheel system. A mains motor of half horsepower capacity is used to drive a series of belt and pulley drive which form a gear-train and produces over twice rpm at the shaft of an alternator. The intriguing thing about this system is that greater electrical output power can be obtained from the output of the alternator than appears to be drawn from the input motor. This is done with the help of Gravity wheel. The gravity wheel or flywheel is coupled with the gear-train in order to produce more excess energy or free energy. Detail study is done with various parameters of flywheel to obtain the maximum free energy out of the system.[1]

Siddharth Shroti has worked on Free Energy Generation Advanced Research. A mains motor of capacity (1/4horsepower) is used to drive a series of belts and pulleys which form a gear-train which produces over twice the rotational speed at the shaft of an electrical generator. The intriguing thing about this system is that greater electrical power can be drawn from the output generator than appears to be drawn from the input drive to the motor. How can that be? Well, Mr Tseung's gravity theory explains that if a energy pulse is applied to a flywheel, then during the instant of that pulse, excess energy equal to 2mgr is fed into the flywheel, where "m" is the mass (weight) of the flywheel, "g" is the gravitational constant and "r" is the radius of the centre of mass of the flywheel, that is, the distance from the axle to the point at which the weight of the wheel appears to act. If all of the flywheel weight is at the rim of the wheel, the "r" would be the radius of the wheel itself. This means that if the flywheel is driven smoothly at constant speed, then there is no energy gain. However, if the drive is not smooth, then excess energy is drawn from the gravitational field. That energy increases as the diameter of the flywheel increases. It also increases as the weight of the flywheel increases. It also increases if the flywheel weight is concentrated as far out towards the rim of the flywheel as is possible. It also increases, the faster the impulses are applied to the system.[2].

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. A FESS can have energy fed into the rotational mass of a flywheel, store it as kinetic energy, and release it upon demand. Keywords [3].

Sudipta Saha, Abhik Bose, G. SaiTejesh, and S.P. Srikanth has worked on Analysis of Flywheel. 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.[4].

Yadav R , Punith P , Sharatbabu, Dr. Jyothi P Koujalagi has worked on flywheel based bicycle generator. Transportation is very important connecting people from different places. A mode of transport is a solution that makes use of a particular type of vehicle, with the increase in population the number of vehicles on road is also increasing. The transportation plays a major impact on environmental-creates air pollution, including nitrous oxide and other particulates and is a significant contributor to global warming through emission of co2. This paper presents a Flywheel based Bicycle Generator. A mode of transportation due to their low cost, ease of use, health benefits and mobility. The main objective of this paper is to convert the rotational energy of rare wheel of the bicycle into electrical energy so that we can recharge the battery.[5]

## III. DESIGNING AND CALCULATION

In this System Design We Mainly Concentrate on the Following Parameters which can be seen in the fig. 3.1.The system consists of design of various parts like Pulley, Flywheel, Belt drive, Shaft, Bearings etc.

1) Design of Shaft and Bearings: There are 2 shaft in the Layout of the system. Thus Design of Shaft is to be calculated in order to find the proper Shaft diameter which would withstand the load easily and to ensure the maximum energy is transfer with minimum loss. Bearing selection is also some important criteria in order to ensure smooth and long lasting functioning of the system.
2) Design of Belt Drive: At the first stage we selected pulley as per standard specification. We know that a belt drive is useful for the power transmission using pulley. Each pulley has different diameters and speed. The belt, wire (rope) drives are used for the power transmission. In the project, we are going to use total six pulleys, so we need three different belt drives.

3) Design of Flywheel: This Project is all about generation of free energy with using the gravitational energy. Thus we are using flywheel of mass 10kg that can utilize the gravitational energy and give us more output.

## A. Calculation

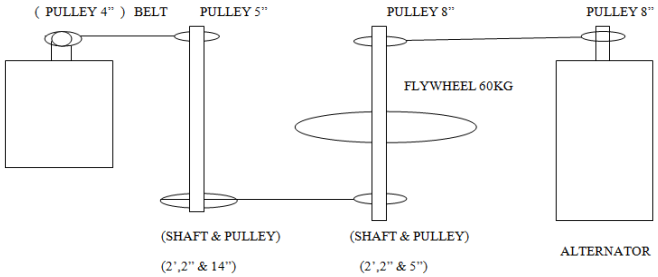


Fig.3.1 Line Diagram

Considered input data

Power **P** = 2HP = 1.419 kW

$N_1$ = Speed of driver pulley = 1440 rpm

$d_1$ diameter of driven pulley = 203.2 mm

Fly wheel diameter = 2ft = 609.6 mm

Mass of the flywheel = 60 kg

$d_2$ = diameter of driver pulley = 101.6 mm

## 1) SHATF DESIGN

Yield stress $\sigma_y$ = 250 N/mm2,

Length of the shaft L=609.6mm,

Density of mild steel ρ =1.491kw

$\tau_{max} = \frac{0.5\ \sigma y}{fos} = \frac{0.5X250}{3} = 41.66 N/mm^2$

Torque = $\mathbf{M_t} = \frac{60X10^6XKW}{2\pi n} = \frac{60X10^6X1.491}{2\pi X720}$

$\mathbf{M_t}$ = 19772.43 Nmm

**Bending Moment**

**For pulley 1**:

$(P_1 - P_2)Xd_1 = M_t$

$(P_1 - P_2)X101.6 = 19772.43$

$P_1 - P_2 = 194.67$

$P_1 - P_2 = e^{\frac{\mu\alpha}{\sin\frac{\theta}{2}}}$

For V- Belt , θ = 40, μ = 0.2

$\alpha = 180 - 2 \times \sin^{-1}\frac{d_2 - d_1}{2c}$

$C = (d_1 + d_2) + 100 = 101.6 + 203.2 + 100$

$C = 404.8$

$\alpha = 180 - 2\sin^{-1}\frac{203.2 - 101.6}{2 X 404.8}$

**$\alpha = 172.77$**

$\frac{P_1}{P_2} = e^{\frac{0.2X172.77}{\sin 20}} = 2.203$

**$P_1 = 356N$**

**$P_2 = 161.82N$**

$P_1 + P_2 + W = 356 + 161.82 + 0.9x81 = 527.20$

$M_A = 637.65 \times 204.8 - 527.20 \times 100$

$= 130590.72 - 52720$

**$M_A = 77870.72Nmm$**

**Pulley 2:**

$(P_1 - P_2)X177.8 = 19772.43$

$P_1 - P_2 = 111.206$

$\alpha = 180.2 \times \sin^{-1}\frac{345.6 X 6 X 101.6}{2 X 556}$

**$\alpha = 154.95$**

$\frac{P_1}{P_2} = e^{0.2X\frac{154}{\sin 20}} = 2.223$

$P_1 = 2.223P_2$

$1.223P_2 = 111.206$

**$P_1 = 202.134N$**

**$P_2 = 90.92N$**

$= P_1 + P_2 + W = 90.92 + 202.134 + 0.9 X 9.81$

$= 301.883$ N

$M_B = 637.65 X 204.81 - 301.883 X 100$

$M_B = 130590.72 - 30188.3$

$M_B = 100402.42$ Nmm

$\tau_{max} = \frac{16}{\pi d^3}\sqrt{(100402.42)^2 + (19772.43)^2}$

$d^3 = \frac{16}{\pi X 41.66}\sqrt{(100402.42)^2 + (19772.43)^2}$

$= \frac{16}{\pi X 41.66}\sqrt{(10471594930)}$

$= \frac{39301.319}{\pi} = 12508.377$

**d = 23.213 mm**

For safe operation with considering vibration parameter 2 inch diameter shaft is selected.

**d = 50.8 mm**

**2) Selection of bearing**

Speed of shaft $N_2$ = 720 rpm

$L_{10h}$ = 20000

**P** ($P_1$ + $P_2$+ $W_1$) = 527.2 N

Bearing Life

$$L_{10} = \frac{60 \text{ x n x } 40h}{10^6} = \frac{60 \text{ x } 720 \text{ x } 20000}{10^6}$$

$$L_{10} = 864$$

**Dynamic Load Capacity**

$$C = P\,(L_{10})^{\frac{1}{3}} = 527.2 \text{ X } (864)^{\frac{1}{3}}$$

**C = 5021.26 N**

50 BC 02 or 55 BC 02

Selected as: $C_{50} = 27070$ N , $C_{55} = 33340$ N

Similarly Bearing 2: P = 301.883 N

$$L_{10} = \frac{60 \text{ X n X } 40h}{10^6} = \frac{60 \text{ x } 720 \text{ x } 20000}{10^6} = 864$$

$$C = 301.883 \text{ x } (864)^{\frac{1}{3}}$$

C = 2875.25 N

As per standard bearing capacity C

Bearing No. For d= 50.8 mm

**3) Belt Drive**

For the first two pulleys

We know that $\frac{d_2}{d_1} = \frac{N_1}{N_2} = \frac{203.2}{101.6} = \frac{1440}{N_2}$

$N_2$= 720 rpm

Now Select Correction Factor According To Service For System From Design Data Book $F_a = 1.2$

Design power $P_d$ = service factor X power to be transmitted

$$= 1.2 \text{ x } 1.491$$

$$P_d = 1.7892 \text{ kW}$$

We select the v-belt type according to power transmission, we select as 'B' type V-belt from the design data book

Normal thickness t (mm) = 11 mm

Width = 17 mm

Velocity = 25 m/sec

Max. no of strands = 9

Assume centre distance between two pulleys

$$C = d_1 + d_2 + 100 = 203.2 + 101.6 + 100 = 404.8 \text{ mm}$$

C= 405mm

Now we find the length of the belt used for drive

$$L = 2C + \frac{\pi(d_1+d_2)}{2} + \frac{(d_2-d_1)^2}{4C}$$

$$= 2 \text{ x } 405 + \pi \frac{(203.2+101.6)}{2} + \frac{(203.2-101.6)^2}{4 \text{ x } 405}$$

$$L = 810 + 478.84 + \frac{(101.6)^2}{1620}$$

**L = 1295.211mm**

$L_P = 1491$mm

Selected B type 57

$$1491 = 2C + \pi \frac{(203.2+101.6)}{2} + \frac{(203.2-101.6)^2}{4 \text{ x } C}$$

$$1012.16 = 2C\frac{(101.6)^2}{4C} = 2C + \frac{2580.64}{C}$$

$$1012.16C = 2c^2 + 2580.64$$

$F_c = k_c$ = Correction factor for belt pitch length for system from table = 0.88

Are

$$\alpha = 180 - 2 \text{ x } \sin^{-1}\frac{d_2-d_1}{2C}$$

$$= 180 - 2 \text{ x } \sin^{-1}\frac{202.2-101.6}{2}$$

**4) Fly wheel**

$$K.E = \frac{1}{2} IW^2$$

Input Rpm to Wheel

$$\frac{N_1}{N_2} = \frac{d_2}{d_1} = \frac{1440}{N_2} = \frac{5}{4}$$

**$N_2 = 1152$ rpm**

$$\frac{N3}{N4} = \frac{d4}{d3} = \frac{1152}{N4} = \frac{5}{16}$$

**$N_4$= 3686.4**

K=0.9 fly wheel with rim/rib

m = 60kg

$I = Kmr^2$

$I = 0.9 \times 60 \times 9.81 \times 0.3048^2$

$I = 49.214$ Kg-$m^2$

$$W = \frac{2\pi n}{60} = \frac{2 \times \pi \times 3686.4}{60} = 386.038$$

$W^2$= 149025.337 rad/sec

$$K.E = \frac{1}{2} \times 49.214 \times 149025.337$$

**K.E = 3667066.468 N-M**

## IV. WORKING PRINCIPLE AND COMPONENT USED

### A. Working Principle

In free energy generation process the motor with 4 inch pulley runs the shaft on which the two pulleys are fitted with the help of belt. Motors pulley is connected with 5 inch pulley which is fitted on one end of shaft with the help of belt. The motor and the shaft1 rotates at same speed. The other end of the shaft1 on which 14 inch pulley is fitted drives the another shaft that is shaft2 on which different dimensions of pulleys and one flywheel is fitted. This 14 inch pulley is connected with the 5 inch pulley which is fitted on the one end of shaft2 with the help of belt. which twice the speed of shaft2. Due to this the flywheel which is fitted on the shaft rotates with high speed and stores the energy. The other end of the shaft2 on which 8 inch pulley is fitted drives the alternator with the help of pulley and belt. The energy stored in the flywheel is supplied to run the alternator to produce maximum amount of current required. When the maximum amount of current is generated in the alternator this current is supplied to the motor with the help of electrical connection to run the motor . The electric supply which we have first used to run the motor is disconnected and the current produced in the alternator is used to run the motor. Now with the help of shaft, pulleys, and belts the alternator runs the motor and vice versa. Due to this the free energy is produced.

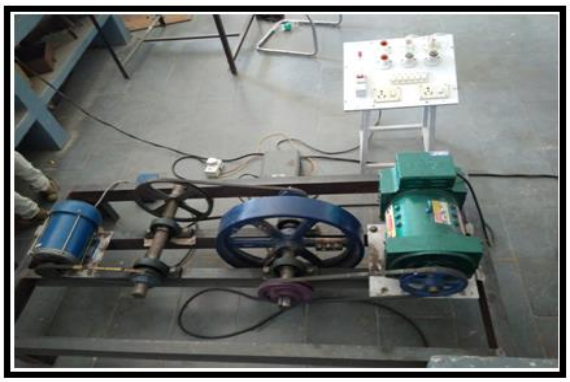

Fig. 4.1.1 Assembled Model

### B. Components Used

1) AC Motor: An AC motor is an electric motor driven by an alternating current AC. An AC motor of 2HP is used to rotate the flywheel using 2 shafts. Specification of AC motor as mentioned in the table below.

TABLE I

SPECIFICATIONS OF AC MOTOR

| S. No | Specifications | Units |
|---|---|---|
| 1 | 1.5 | kW |
| 2 | 2 | HP |
| 3 | 1440 | RPM |
| 4 | 190/230 | Volts |
| 5 | 1 | Phase |
| 6 | 11.5 | AMP |

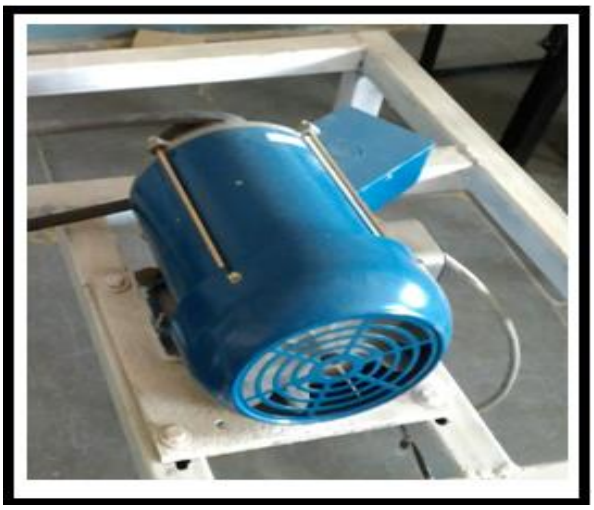

Fig. 4.2.1 AC motor

2) Alternator: An alternator is an electrical generator that converts mechanical energy to electrical energy in the form of alternating current. 5KV alternator is used to generate electric current with the help of flywheel stored energy. The maximum RPM of alternator used is 1500RPM.the detailed specification of alternator is shown in table below.

TABLE II. SPECIFICATIONS OF ALTERNATOR

| S. No | Specifications | Units |
|---|---|---|
| 1 | 5 | KVA |
| 2 | 1 | Phase |
| 3 | 1500 | RPM |
| 4 | 18 | AMP |
| 5 | 230 | Volts |

Fig. 4.2.2 Alternator

3) Flywheel: A flywheel is a mechanical device which stores rotational energy. A rib type flywheel of 22 inches diameter is used to store energy. This stored energy is transformed through the belt drives to the alternator for generation of electricity. figure 4 shows flywheel mounted on c-chanel frame.

Fig. 4.2.3 Flywheel

4) Shaft: A shaft is a rotating machine element, which is used to transmit power from one part to another part using transmission element such as pulleys and gears. Two shaft of length 2ft and 2 inch diameter is used to transmit the motion for AC motor to flywheel.

Fig. 4.2.4 Shaft

5) Pulley: A pulley is a wheel on an axle or shaft that is designed to support movement and change of direction of a taut cable or belt, or transfer of power between the shaft and cable or belt. Six pulleys of different diameters are used to transmit motions.

Fig. 4.2.5 Pulley

6) Belt: A belt is a loop of flexible material used to link two or more rotating shafts mechanically, most often parallel. Belts may be used as a source of motion, to transmit power efficiently or to track relative movement. Belts are looped over pulleys and may have a twist between the pulleys, and the shafts need not be parallel.

Three V- type belts of specified length are used to couple two shafts, motor, flywheel and generator. figure 7 shows V-type section B-belt.


Fig. 4.2.6Belt

7) Structural frame: Structural frame is used to transmit the loads and vibrations of rotating members to ground. C-Chanel frame of 2 inch thickness, 6 ft length and 3 ft width is used to carry all the components. Figure 8 shows the fabricated model of C frame structure.

Fig. 4.2.7 C-Chanel Frame

8) Bearings: A bearing is a machine element that constrains relative motion to only the desired motion, and reduces friction between moving parts. Four journal bearing of diameter 2 inches is used to support shaft 1 and 2.

Fig. 4.2.8 Journal Bearings

## V. FABRICATION

### A. Boring

In machining boring is the process of enlarging a hole that has already been drilled or cast by means of a single-point cutting tool or of a boring head containing several tools. A hole of 2 inch diameter is bored in 4 pulleys and other 2 pulleys are bored with a diameter of 1 inch to fix these pulleys on shaft.

Fig. 5.1.1Boring of pulley

### B. Keyway

Keyway is a machining process which is performed on the shafts to hold the pulleys. A slot of 4 mm length is machined on both the shafts to grip the pulleys using keys.

Fig. 5.2.1 Key Way on Shaft

C. **MIG Welding**

MIG welding is an arc welding process in which a continuous solid wire electrode is fed through a welding gun and into the weld pool, joining the two base materials together. By using MIG welding the structural C-Chanel are welded to make structural frame for mounting all the components on it.

Fig. 5.3.1 MIG Welding

D. **Drilling**

Drilling is a cutting process that uses a drill bit to cut a hole of circular cross-section in solid materials. A 1 inch diameter holes are drilled on the structural C-Chanel frame for fixing of all components on it.

Fig. 5.4.1 Drilling of C-Chanel

E. **Cutting**

Cutting is the separation of a physical object, into two or more portions, through the application of an acutely directed force. On cutting machine two C-Channels of 20ft each are cut into 6 different lengths in which 4 are of 6ft and 2 are 3ft.

Fig. 5.5.1 Cutting of C-Chanel

F. **Fitting**

After all above the operations by using nuts and bolts all the components used are mounted on the structural C-Chanel frame.

Fig. 5.6.1 Assembled Model

TABLE III. TESTING

| S. No | Specimen | Speed(RPM) |
|---|---|---|
| 1 | Speed of Shaft 1 $N_2$=$N_3$ | 1200 |
| 2 | Speed of Flywheel $N_4$ | 2200 |
| 3 | Speed of Generator | 1550 |

K.E = $\frac{1}{2}IW^2$

I = $Kmr^2$

I = $0.9\times60\times9.81\times 0.3048^2$

I = 49.214 Kg-$m^2$

W = $\frac{2\pi N4}{60} = \frac{2\times\pi\times}{60} = \mathbf{230.38}$

$W^2$= 53074.944rad/sec

K.E = $\frac{1}{2}\times 49.214 \times 53074.944$

**K.E = 1306015.147N-MTesting**

## V. CONCLUSION

Energy stored in the flywheel through 2 HP motor has been utilized to run the generator to produce electricity for running of 2HP motor and remaining energy to utilize for other electric equipments. Hence through this methods free energy has been utilized for domestic purpose.

The other main advantage of Conventional Free energy using flywheel is that it can generate energy without extra equipment and this free energy generation is nonhazardous and environmental friendly. Can be use in various applications like electric fuel cars, and increase the efficiency of traditional electrical Equipment's

## VI. REFERENCES

[1]. S.U.Maji , M. S. Mane C, Kshirsagar, A. Jagdale, D. Malgar , "free energy using flywheel" IJSRD - International Journal for Scientific Research & Development, Volume 4, Issue 02, 2016 ISSN : 2321-0613.

[2]. Siddharth Shroti "Free Energy Generation Advanced Research" imperial Journal of Interdisciplinary Research (IJIR) Vol-3, Issue-4, 2017 ISSN: 2454-1362

[3]. Akhilesh Barwahe, Amrendra Kumar, Ankit Domde, Deepak Dhakad, Manish Kumar Dhadse, Vishal Wankhade, "electricity generation using flywheel" International Journal for Research in Applied Science & Engineering Technology (IJRASET), Volume 4 Issue IV, April 2016,ISSN: 2321-9653.

[4]. Prof. Bharat M. Jibhakate, Jayant P. Karemore, Jitendra D. Jaiswal, Kapil V. Kalambe, Nilesh S. Zade, Sitleshkumar K. Sonkalihari, "review of free energy generator using flywheel" International Research Journal of Engineering and Technology (IRJET), Volume: 04 Issue: 02 Feb -2017, ISSN: 2395 -0056.

[5]. Kumud Pant, Jyoti Mehra1, Ketan Naula, Sunil Singh and Mr. Ambedkar Rai "Electricity Generation using Flywheel" International Journal on Emerging Technologies (Special Issue NCETST-2017) 8(1): 582-584(2017), ISSN No: 2249-3255.

**Cite this article as :**

Mohammed Asif Kattimani, Mohammed Ashfaque Inayath, "Free Energy Generation Using Flywheel", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 6 Issue 5, pp. 200-209, September-October 2019. Available at doi : https://doi.org/10.32628/IJSRST196522
Journal URL : http://ijsrst.com/IJSRST196522