

Generation of Electricity by using Pressure of Vehicle

¹Shardul Nikhil Ashok, ²Deven Sanjiv suryawanshi, ³Mahire Vishal Suresh, ⁴Shirsath Piyush Ravindra, ⁵Patil Harshal Vijay

BE Electrical
RCPIT , Shirpur
shirpur, India

Abstract: The generation of electricity by using the pressure in which we decided to take the speed breaker as a working phenomenon. The requirement for this project is nothing but electromagnetic coil, power magnet, spring assembly & stored device first we working on generation side were we take power magnet on upper side and in lower side the electromagnetic coil by using pressure the magnetic produced flux get cut and the electricity get generated. It is very effective idea to generate electricity with the help of waste energy.

I. INTRODUCTION

Now a days there are so many sources for electricity generation but most of them require high budgets and high mankind power. We know that by using pressure we can produce electricity therefore we decided to use the pressure for electrical power generation. If we talk about the Vehicle there is huge amount of pressure get created on the speed breaker so by making advantage of that we produce electricity. The waste energy of vehicle get utilized in the form of energy. The model we placed on the speed breaker and when vehicles passed on that model the some amount of pressure get created that pressure is used to create electricity and it will store in the storing devices. It doesn't require much maintenance it required only initial establishment and checking. This idea gives birth to so many future scope. The foot also produce pressure so we can used in footstep.

A. Proposed Work:-

In this proposed system, it consists of following sections.

Speed breaker along with spring Accembally:-

It consist of two sections, upper section and lower section. Upper section consist of power magnet and lower section consist of electromagnetic coil. Which having number of turns i.e 300 turns. When the vehicle or any car moves from this assembly then after due to the pressure of vehicle this spring assembly get compressed and then both upper and lower sections get close to each other. In other words power magnet get closer to the coil and then the fluxes of coil get cut or linked to magnet and then the emf get induced in it. Then the small LED get blinks, this mechanism mostly depend on faradays law of electromagnetic induction.

B. Specification of generating section:-

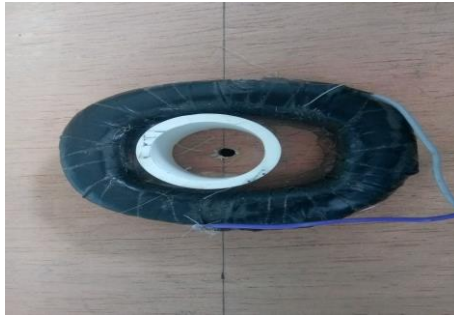
Specification of generating section:-

1 .magnet: Neodymium magnet is used to generation purpose and the magnetic power is very much higher than any general or common we used for commonly in deally applications this magnet having highly magnetic field arround it due to higher value of its BH curve.



Neodymium magnet

2. Electromagnetic coil:



It is having the Number of turns is 300 by calculating the turns ratio method and 26 swg .

3. Storage Mechanism or Assembly:-

Without using any type of energy storage assembly the operation of this mechanism cannot be completed. So the energy would be stored in battery which can already being generated in generating assembly.

Storage assembly consist of following components or parts:-

1. Transformer (Step up):-Rating: Step up, 1.2 ampere current, 12 to 230 volt.
2. Astable Multi vibrator using timer 555 IC: It mostly used to generate upto 100KHz frequency.
3. Z44 MOSFET: - For amplification purpose
4. Bulb or CFL: Up to 3 watt.
5. Spring mechanism:-

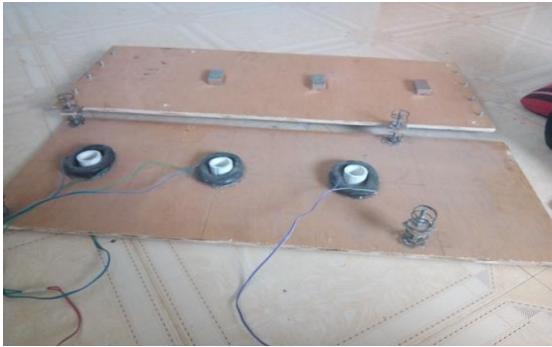


Operation of Storage section:

When the energy generates it can be stored by connecting the terminal wires to the storage assembly .When energy is stored in the battery where 3 battery are connected in series each battery having capacity of 3 volt, so overall capacity of 12volt.Now the energy is stored corresponding to the number of passing of vehicle throw it. Now for utilization purpose of stored energy, we uses the Toggle switch for on and off of bulb.

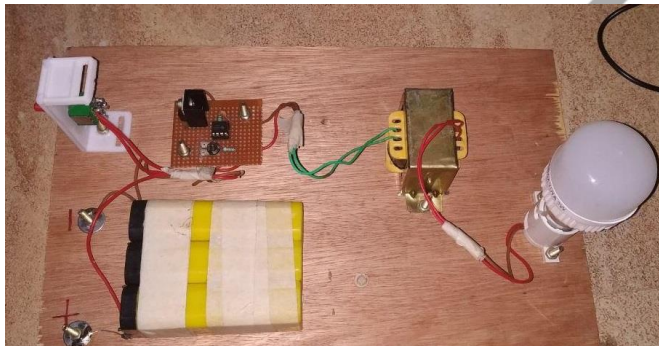
So now this can be done by ASTABLE MULTI VIBTATOR. It consist Timer IC555 along with amplification MOSFET - Z44.It will ensure us to provide large range of frequency oscillations upto 100KHZ.Timer 555 can be used to provide free running astable oscillator to continuously produce square wave pulses .It will generate frequency maximum upto500KHZ . Then the output of vibrator ckt given to the input of primary of step up transformer, it gives voltage upto 6.32 voltage. And then after transformation action at the output i.e. it provides secondary output upto 216 voltage. At output bulb is connected so it will glow, it will glow according to our requirement.

Setup of Project:



In This Project The main thing is that the supporting structure is of plywood having higher in magnitude to sustend the higher pressure on the mechanism and in this project we arrange the Electromagnetic coils in this way to parallel to the each other of coils and the magnets and at the corner side the the spring arrangement is placed for the recovering purpose and this is the part of mechanism

Storage and Transmission Circuit:-



In above the storage and transmission circuit is use and this circuit is having at the receiving end the 230V supply is available the transformer is act as power booster circuit and this increase the voltage at pick value of it the circuit is shown in the figure is the inverting circuit and this circuit having the IC 555 timer ic with adjustable resister and this resister and the main component are the transistor etc. this circuit are used to store the energy boost up and transfer through the transformer to the consumers as per requirement .

Conclusion:-

In this project, now a days there is shortage of resources which will help us in production of electrical energy and also any other source, it will helps us to fulfill our daily requirements of energy production. This comes criteria of mobility and generation also, so it become very ecofriendly and it not emits any type of harmful fumes to atmosphere, so it reduces the effect of global warming .It will enable us and also to village areas the energy without any extra efforts throughout years.

Result:

1. Generate of voltage in one press: 0.043 volts
2. Generation of voltage in two press: 0.1210 volts
3. Current at generation section: 0.138 micro amp
4. Battery total charging time: 30 min / hour
5. Voltage at primary side of Transformer: 11.8 volts
6. Voltage at secondary side of Transformer: 218 volts
8. Maximum pressure on generating unit: 28 KG
8. In one hour maximum pressing as suppose 800 so voltage generated is : $800 * 0.040 = 32$ volts

Future Scope:-

This project is in the stage of development .In this project .But in future generation of energy is done by using this technique throw out years. Now in this developing stage of country there is a lack of various resources. But to overcome such problems such types of different technique should be adopted. This will helps us to increase the quality of energy for our utilization and it will also help for next generation. This will used in multiplexed car parking. This helps to provide charging of batteries and to glow the street lamp during night. This is more suitable and compact mechanism to enhance efficiency.

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