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Vertical Axis Wind Turbine

Dhiraj kuma[1], Md Noor Alam[2]
Department of Mechanical Engineering, Arya institute of Engineering and Technology

Abstract: In this system, we make utilisation of vertical axis Wind turbine for energy generation. Vertical Axis Wind Turbine is which is run by energy of air. It comprises of vertical axis Wind mill, DC motor,12v battery ,dc inverter and transformer .

I. INTRODUCTION

Because of increase in demand of electricity ,relying on fossil fuel based energy will pose threat to the human kind,as the availability is limite. Hence the focus is on renewable energy sources like wind, solar, tidal. There has been a surge in these energy uses ,and it will go on and on as the time goes . Wind energy is a good source to use as renewable energy, before 21st century wind was primarily use to pump water from Wells to feilds of crops ,but last 20 years cost of wind energy has been dropped by 80% turning it into the most affordable form of clean energy.

II. WORKING METHODOLOGY

In this we have used 12v DC generator with a maximum speed of 2000rpm . The generator converts mechanical energy to electrical energy. As wind strikes the blade it creates pressure zones ,these pressure zones is reason to rotate the blade of turbine. Output of generator goes to the controller,which controls the energy and send it to the battery. It also prevents overcharging and increases the efficiency of overall mechanism.

III. DESCRIPTION OF HARDWARE

A. Generator

DC 12v , 2000rpm generator. Converts mechanical energy to electrical energy produced by wind .wind strikes the blade the rotator rotates and simultaneously the generator also rotates.

Fig.1 generator

B. Charge Controller

Charge regulator or battery regulator limits the rate the current flow, which prevents from overload. It may also prevent from deep discharging a battery and protects battery life .

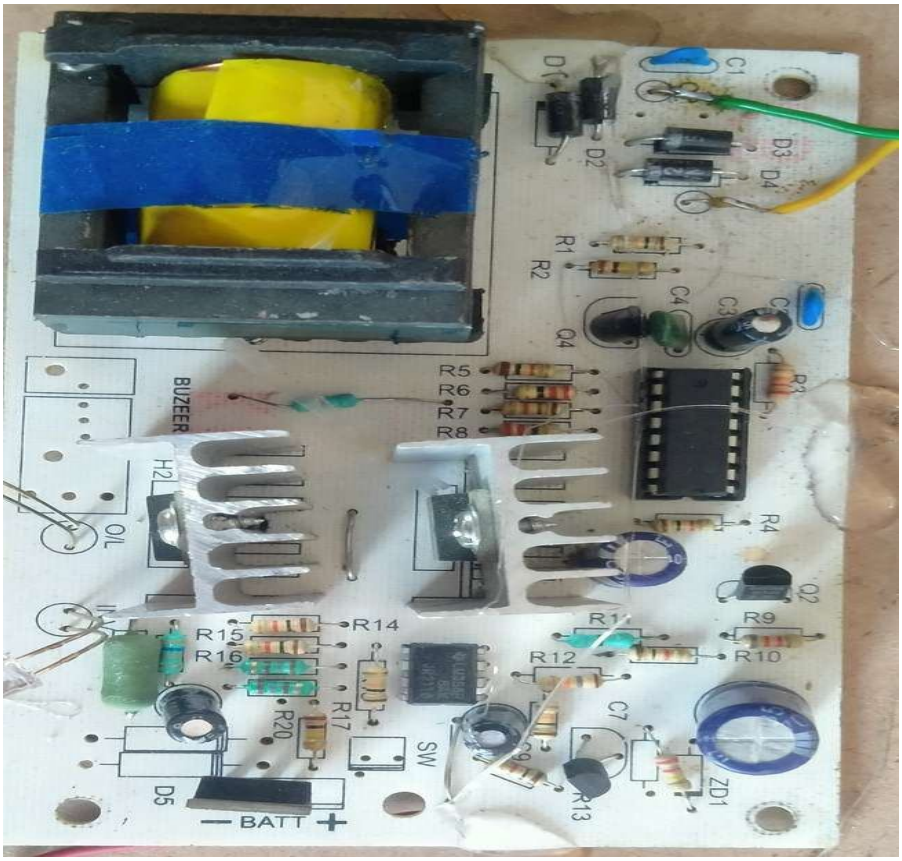

Fig.3 charge controller circuit

C. Rechargeable Battery

In this we are using 12v, 7.2ah rechargeable battery to store the energy supplied.

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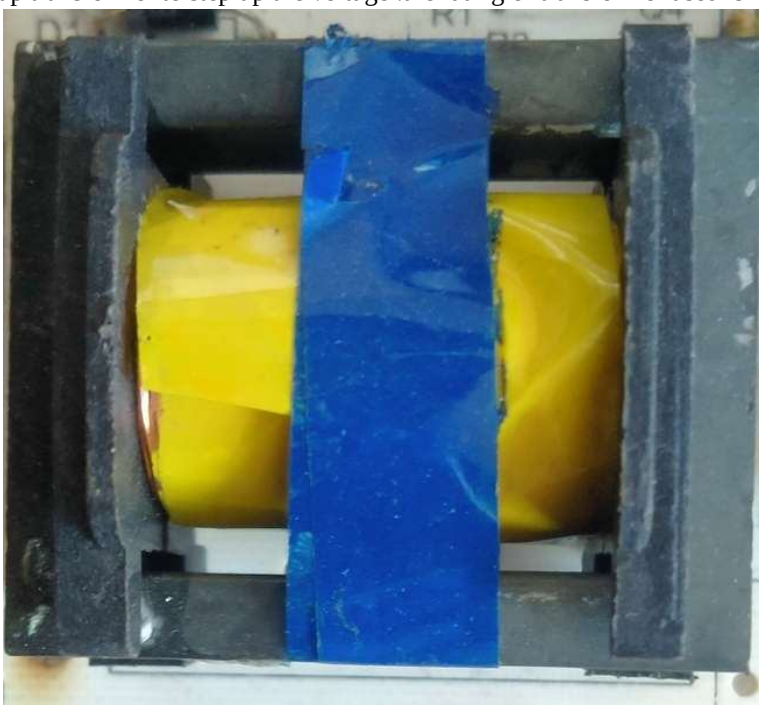
D. Step-Up Transformer

In this we will be using a step up transformer to step up the voltage .the rating of transformer used is 12-0-12 volt.



IV. RESULT AND OUTPUT

According to the proposed plan the final outcome of this paper leads to the development of vertical axis Wind Turbine.
This project can be used in highways as the vehicles passes also makes winds with some power ,power can be easily generate ,it can be used in providing small amount of electricity on rural farms, crops feilds etc. speed can be observed in SCADA system software.

V. CONCLUSION

The vertical axis turbine is successfully developed and gives constant supply. The main purpose and application of this model is to use vaccum and pressure created by high speed winds.

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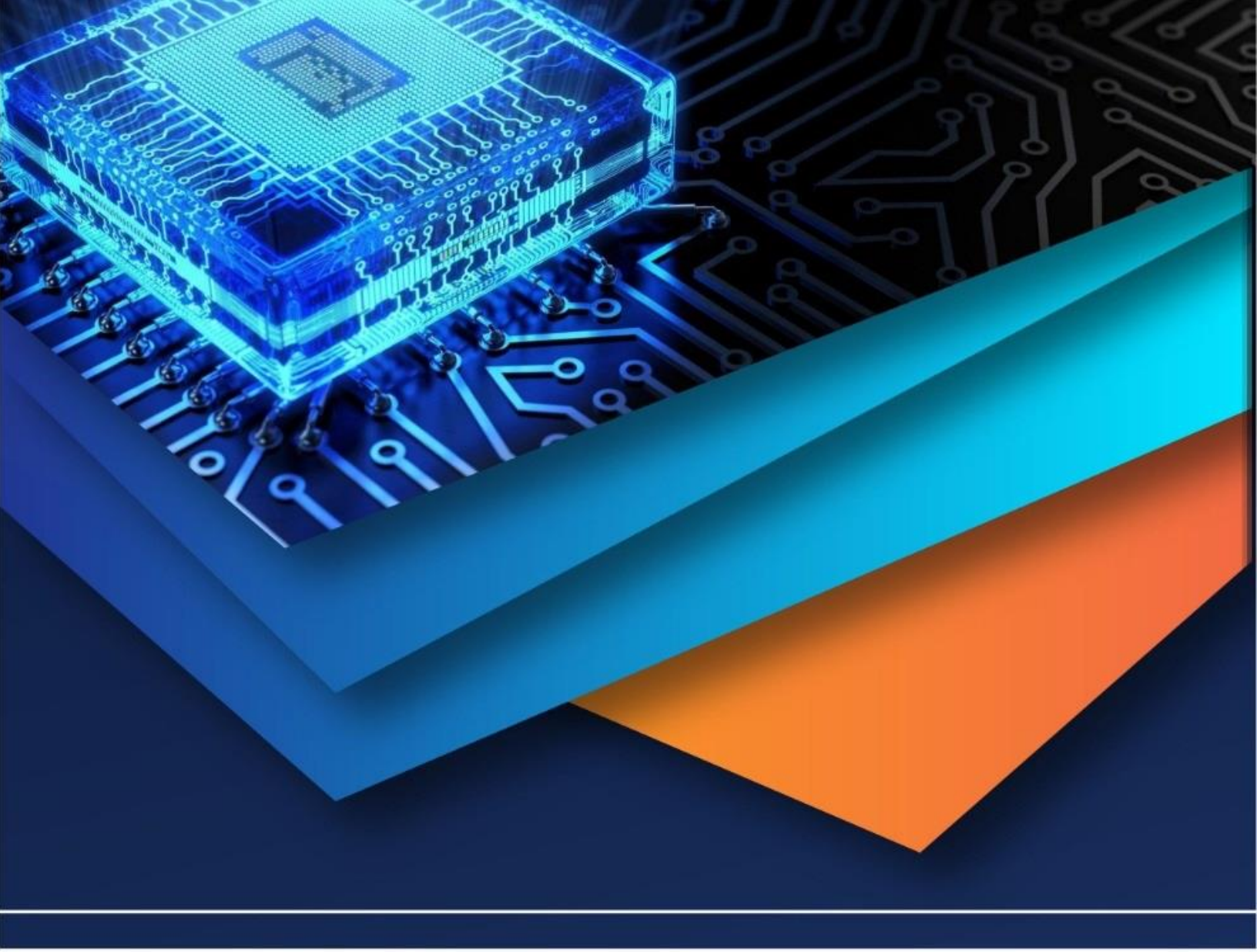

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