ENERGY GENERATION USING RAW FREQUENCY AND LIGHTRAYS

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Abstract—In this paper, we describe how to charge mobile by using that source which is widely available and can hardly eradicate from an environment (noise). Also, here we are considering second parameter as source (light)simultaneously.

As we already know, transducer can convert energy from one form of energy to another form, by using same mechanism we are converting noise into useful energy which can be used to operate all possible DC appliances

We are using piezoelectric diaphragm sensor which will sense sound in form of vibrations. Also, a Photo Voltaic Cell which will absorb photons from openly available light. Hence, we are using LCD display which will show by which source the energy is getting generated at that time.

I. Introduction

In most of the underdeveloped and developing nations, there is scarcity of energy and also most of daily work is based on electricity. In other words, we can state that now-a-days it's quite difficult to survive without electricity. In day to day life as there is increase in the use of electricity, various means were developed by using which we can generate a sizable amount of electricity.

There are various conventional and non-conventional sources used to generate energy. The conventional sources of energy consist of coal, gas and oil which are on the verge of extinction. These are also termed as non-renewable sources of energy. The non-conventional sources are solar energy, tidal energy, wind energy and geothermal energy and these are also termed as renewable sources ofenergy.

In this specific operation we are going to generate electricity by using noise source which is widely present and cannot be removed from an environment. Along with noise, light is also being considered as another parameter.

Noise gets produced near airports due to airplanes, on roads due to large amountof vehicles and also during some cultural festivals like Ganesh Chaturthi. Light is something which is present abundantly and openly in an environment which can be utilized for many different works. So, in this way, we are generating energy by using these two readily availablesources.

II. BlockDiagram

As describe earlier, light and sound are being considered as the generation materials which will be sensed by Photovoltaic Sensor and Piezoelectric sensor respectively. Output of these two sensors is supplied to given voltage regulator which generates constant voltage and then to Arduino board so as to turn iton.
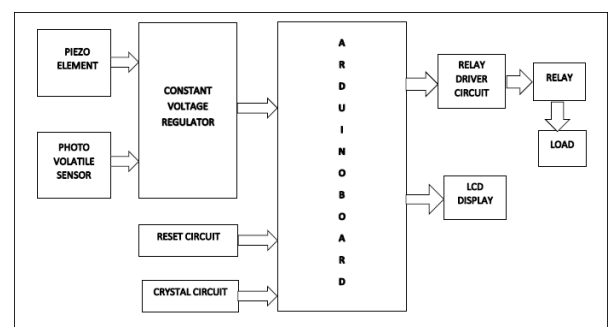

Fig 1 Block Diagram

Once Arduino board is turned on, all the modules connected to Arduino get turned on. Subsequently LCD display connected to it will indicate, by which parameter the voltage has been generated. Simultaneously relay driver circuit will turn on the DC appliance connected at the output end.

III. System specification:-

Hardware specification: -

- **Photovoltaic cell:-**

It absorbs energy in the form of photons through available source of light i.e. Sunlight and stores it in the form of electrical energy.
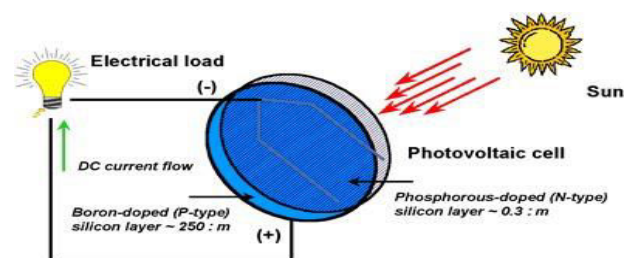

Fig 2: Concept of Photovoltaic Cell

2 Piezoelectric sensors: -

This sensor consists of a piezoelectric crystal (made from quartz) which functions as a force-sensitive voltage source where the piezoelectric will be in between two plates. Pressure exerted on the crystal surface is proportionate to the voltage produced by thecrystal.
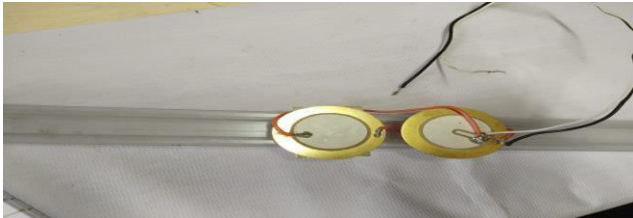

Fig 3: Piezoelectric plates

Software specification:-

1. Proteus

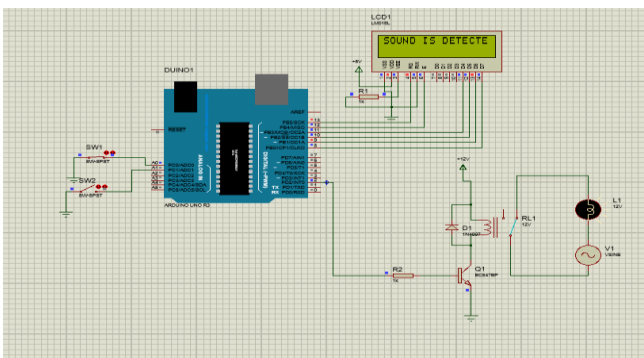Proteus is software which is use for circuit simulation purposes.
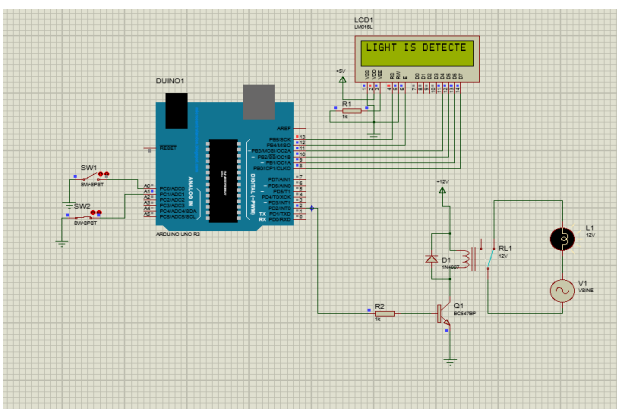

Fig 4 : SOUND DETECTED SIMULATION

Fig 5 : LIGHT DETECTED SIMULATION

2 Arduino

The Arduino UNO is an open source microcontroller board. Which is use for controllingpurposes.

IV. ExperimentalResult

This model should be able to provide electrical energy to charge the battery of any DC appliances (eg :- mobile phone , toys).This should be done without using any AC power supply. Also, it should be able to provide high battery charge by using Photovoltaic cell and

Piezoelectric sensor by accepting low possible voltage. It should generate electricity by using non-conventional energy sources.

V. Future Scope:-

1) It could be used to convert noise produced at roadways to electrical energy so as to light up the streetlights.
2) We could also add battery circuit in this model so that it can store the energy for futureuse.

VI. Conclusion

There are multiple sources of sound which go unnoticed, one of them is the noise generated by automobiles. The use of transducers to convert sound waves (noise pollution) into energy demonstrates that noise can act as an alternative source of energy. It is noted that the values from the motorcycle can be further enhanced as they were taken after the muffling effect of the exhaust pipe. This method further gives way to a heretofore largely unexplored source of clean energy. The results show that as the noise level increases, the corresponding voltage that was measured at the multimeter also increased. The results further show that there is a non-linear relation between sound energy and the developed voltage. This relationship can be furthered using higher quality equipment. This shows that through a sustainable amount of time, the methods adopted can be used to create sufficient electrical energy that can be successfully stored in a DCbattery.

VII. Reference

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