

ALTERNATIVE ENERGY GENERATION AND STREET LIGHT MANAGEMENT SYSTEM

¹Vandana D, ² C.Mallikarguna

¹Student, ²Associate Professor

¹Department of Industrial Automation Engineering,

¹VTU PG Center, Mysuru, India

Abstract : In day today life the usage of intensity swings to be important for each work .The power conveyed in this paper won't taint the environment and it is additionally won't to depend upon the atmosphere conditions. The paper proposes a novel strategy for the formation of intensity using piezoelectric sensors kept along the pathways which can prepared to charge the battery and prepared to supply the power at whatever season of our essential. Consistently we individuals stroll for something like a kilometer and this physical energy in this way created from these means can be utilized without it being squandered. Here we make utilization of the piezoelectric sensor on which when weight is connected, voltage is produced. Contingent upon the voltage necessity the quantity of sensors can be expanded. The power delivered by this method can be used for increasing the street lights, furthermore for action reason, sign sheets of roads. Finally the power which will be surrendered can be given to national lattice for power reason

Keywords: Electricity, Piezoelectric sensor.

I. INTRODUCTION

In day today life the usage of intensity swings to be important for each work .The power conveyed in this paper won't taint the environment and it is additionally won't to depend upon the atmosphere conditions. The paper proposes a novel strategy for the formation of intensity using piezoelectric sensors kept along the pathways which can prepared to charge the battery and prepared to supply the power at whatever season of our essential. Consistently we individuals stroll for something like a kilometer and this physical energy in this way created from these means can be utilized without it being squandered. Here we make utilization of the piezoelectric sensor on which when weight is connected, voltage is produced. Contingent upon the voltage necessity the quantity of sensors can be expanded. The power delivered by this method can be used for increasing the street lights, furthermore for action reason, sign sheets of roads. Finally the power which will be surrendered can be given to national lattice for power reason

PROPOSED WORK

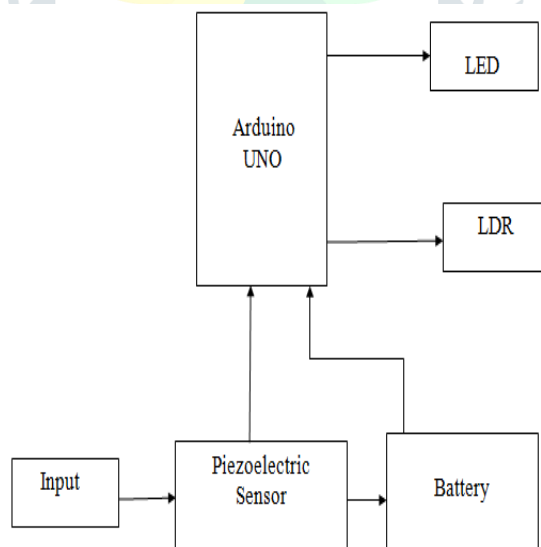


Fig2.1: Block diagram

The energy while walking or running. This energy is Converted in to electrical energy. The energy while walking or running is applied to the piezoelectric sensor. It produces the electric pulse .which converts it into the voltage of 5v and stored in the battery that is given to the Arduino UNO microcontroller .By using the LDR it checks whether it is bright or dark .if it is dark then the streets light are made to on state automatically

II. HARDWARE DETAILS

3.1 PIEZOELECTRIC SENSOR

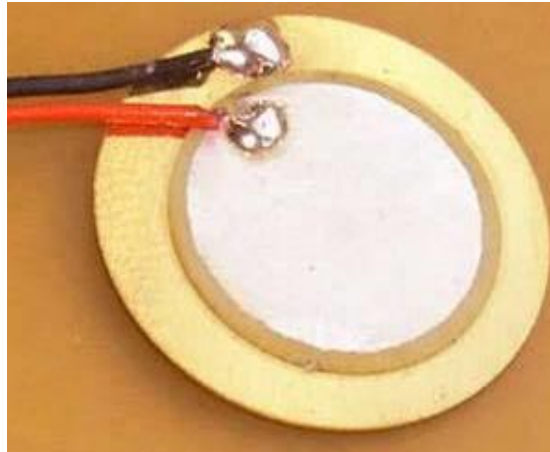


Fig 3.1 piezoelectric sensor

A piezoelectric sensor is a gadget that utilizes the piezoelectric impact to quantify weight, increasing speed, strain or power by changing over them to an electrical flag. Piezoelectric sensors have turned out to be flexible apparatuses for the estimation of different procedures. They are utilized for quality confirmation, process control and for innovative work in various ventures. It was just in the 1950's that the piezoelectric impact began to be utilized for modern detecting applications. From that point forward, this estimating standard has been progressively utilized and can be viewed as a develop innovation with a remarkable intrinsic dependability. It has been effectively utilized in different applications, for example, in restorative, aviation, atomic instrumentation, and as a weight sensor in the touch stack of cell phones. In the car business, piezoelectric components are utilized to screen burning when creating inner ignition motors. The sensors are either specifically mounted into extra gaps into the chamber head or the sparkle/shine plug is outfitted with an implicit small scale piezoelectric sensor.

3.2 LIGHT DEPENDANT RESISTOR



Fig 3.2: : Light dependant resistor

LDR is a part that has a (variable) opposition that changes with the light power that falls upon it. This enables them to be utilized in light detecting circuits. These gadgets rely upon the light, when light falls on the LDR then the opposition diminishes, and increments in the dark. When a LDR is kept in obscurity place, its obstruction is high and, when the LDR is kept in the light its opposition will diminish. Light needy resistors, LDRs or photo resistors are frequently utilized in circuits where it is important to distinguish the nearness or the dimension of light. They can be portrayed by an assortment of names from light ward resistor, LDR, photo resistor, or even photograph cell, photocell or photoconductor. LDR Based light Intensity Control for Street Lights. ... These lights devour low power and its life is more when contrasted with HID lamps. A light depending resistor is utilized to identify the light. The obstruction of the LDR radically diminishes as per the sunlight.

3.3 ARDUINO UNO

The Arduino UNO is an open-source microcontroller board dependent on the Microchip ATmega328P microcontroller and created by Arduino. The board is furnished with sets of computerized and simple info/yield (I/O) sticks that might be interfaced to different extension sheets (shields) and different circuits. The board has 14 Digital pins, 6 Analog pins, and programmable with the Arduino IDE (Integrated Development Environment) by means of a sort B USB link. It very well may be fueled by a USB link or by an outside 9 volt battery, however it acknowledges voltages somewhere in the range of 7 and 20 volts. It is likewise like the Arduino Nano and Leonardo. The equipment reference configuration is disseminated under a Creative Commons Attribution Share-Alike 2.5 permit and is accessible on the Arduino site. Format and generation documents for certain adaptations of the equipment are additionally accessible. "Uno" signifies one in Italian and was picked to stamp the arrival of Arduino Software (IDE) 1.0. The Uno board and form 1.0 of Arduino Software (IDE) were the reference variants of Arduino, presently developed to fresher discharges. The Uno board is the first in a progression of USB Arduino sheets, and the reference display for the Arduino stage.



Fig 3.3: Arduino UNO

IV. SOFTWARE USED

4.1 Arduino IDE

The Arduino integrated development environment (IDE) is a cross-platform application (for Windows, , Linux) that is written in the programming language Java. It is used to write and upload programs to Arduino compatible boards, but also, with the help of 3rd party cores, other vendor development boards. The Arduino IDE supports the languages C and C++ using special rules of code structuring. The Arduino IDE supplies a software library from the Wiringproject, which provides many common input and output procedures. User-written code only requires two basic functions, for starting the sketch and the main program loop, that are compiled and linked with a program stub *main()* into an executable cyclic executive program with the GNU toolchain, also included with the IDE distribution.

III. RESULT



The Fig. speaks to the individual strolling on the sensor plate, here we have shown by the applying some measure of weight with the finger of our hand. At whatever point the weight is connected on the piezoelectric sensor plate, the material gets compacted i.e., the adjustments in measurement of the sensors creates the proportionate measure of voltage (5v). This created voltage is given to the Arduino UNO and LDR is utilized as change to ON and OFF the road li

IV. CONCLUSION

Power age utilizing stride is effectively tried and executed which is the best efficient, moderate energy answer for ordinary citizens. This can be utilized for some applications in rustic zones where control accessibility is less or absolutely nonattendance. As India is a creating nation where energy the board is a major test for tremendous populace. By utilizing this we can drive both A.C Just as D.C loads as per the power connected on the piezoelectric sensor.

REFERENCES

- [1] Ch.Bhanu Prakash¹, A.V.Ramana Rao², P.Srinuva, "Street Power Age by Speed Breaker", Worldwide Diary of Building Patterns and Innovation (IJETT), and ISSN: 2231-5381, Volume 11 Number 2, pp. 75-78, May 2014.
- [2] Kausal Pratap singh, Priyank Singh, „Eco-Accommodating Power Generator From Occupied Road“, Universal Diary of Rising Patterns in Building and Development(IJETED), ISSN 2249-6149, Issue 4, Vol.3, pp. 65-73, May 2014.
- [3] Akshay Tank, Prof. Chandni V. Shah, Keyur Shah, "Eco-Accommodating Vitality Age through Speed Breaker", Universal Diary of Designing Improvement and Exploration (IJERD), ISSN: 2321-9939, Issue 1, Volume 2., pp. 1232-1235, 2014.
- [4] "The 8051 Microcontroller and Implanted Frameworks" by Muhammad Ali Mazidi and Janice GillispieMazidi, Pearson Instruction

