# Generation of Electricity Using Pizeo Electric Material Along With Tracking and over speeding of Vehicle

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**ABSTRACT-**
With the decrease in energy consumption of portable electronic devices the concept of harvesting renewable energy in human surrounding arouses a renewed interest. The aim of this research work is to make power generation more sustainable, economical and ecological by utilizing the advancement in the technology. It's really very difficult to imagine our life without electricity, our life would really stop so there is high need, to produce electricity at faster rate and find some other feasible method to produce electric energy. Pizeo material converts mechanical strain into electric energy this property of pizeo material could be used to make a device which would be able to sustainably convert the sound energy to electric energy as pizeo material convert sound energy to electric energy. Transducer is also used to convert Mechanical energy to electric energy

**Keywords-** Integrated Circuit (IC), Encoder, Decoder, Microcontroller, RF(Radio Frequency)Module, Pizeo.

## I.INTRODUCTION
Basically this technology refers to efforts to add information and communication to transport system.
We are using a well functioned and automatically controlled transport system which is designed to control the problems faced due to over speeding and problems faced while trapping them, a process from trapping no human help will be needed in this.

Other concept is about electricity using vibrations created by vehicles, as vehicles moves they create some vibrations which will be used to produce pressure in form of stress on piezoelectric disc. A pizeo electric crystal will be installed on tracks which will sense the seismic vibrations and will generate electricity. The idea of research is to develop such a system that will be able to monitor traffic activities and produce correct data Speed of vehicle is controlled by set value inserted. Once the upper limit is set it is not possible to increase speed of vehicle. This set value is provided by RF transmitter. RF transmitter sends a set value of code to car, as the car receives a code then car maximum speed limit is set. Now vehicle driver cannot exceed the speed limit. As the vehicle is out of range then car speed can be change.

## II. AN OVERVIEW OF THE TECHNOLOGY THAT IS BEING USED

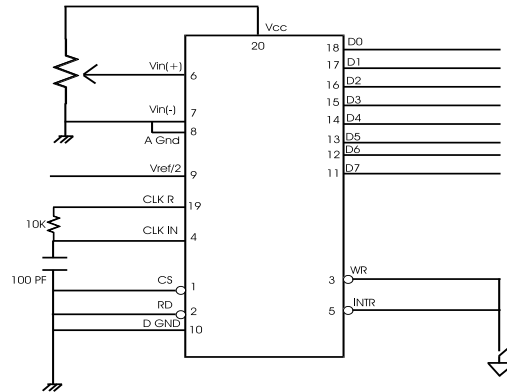

Fig 1. ADC 0804 CHIP

ADC 0804 is usedto check the value of input resistor. This ADC is 8 bit ADC. Output of the ADC is connected to the microcontroller port p1. ADC converts the input voltage and deliver to the microcontroller. Input variable resistor actually varies the 5 volt DC. When we vary the input voltage then ADC converts the input voltage to the Digital voltage. . Output of ADC is hex code, microcontroller coverts the hex data in ASCII code and display into the LCD module. Microcontroller gets the value and save the same in the ram content of the microcontroller. Controller continues vary the output of the DC motor via varying the duty cycle. Controller compares the change with the set value. When input value is equal to the set value then microcontroller stop to increasing the speed of the DC motor.5volt regulated power supply is used for the LCD display. For this purpose we use 7805 regulator with filter capacitor to provide a ripple free regulated voltage to controller and LCD display

Pin no 18 and 19 of the microcontroller is connected to external crystal oscillator to provide an external clock to microcontroller by which we set the machine cycle of the controller.
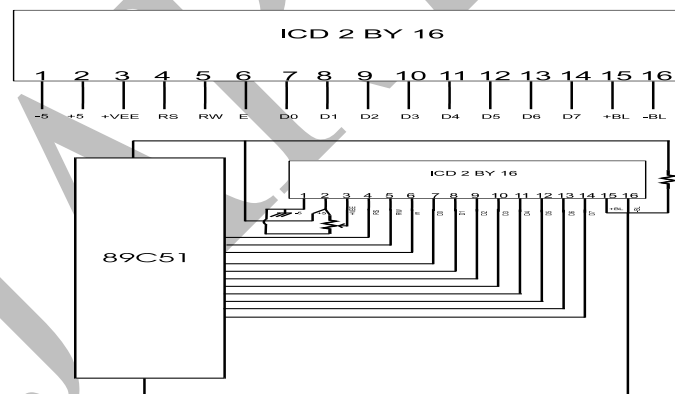


**Fig 2.  LCD Display**

## III. A BASIC CONCEPTUAL STRUCTURE OF THE SYSTEM

The speed with which a microcontroller executes instructions is determined by what is known as the crystal speed. A crystal is a component connected externally to the microcontroller. The crystal has different values, and some of the used values are 6MHZ, 10MHZ, and 11.059 MHz etc. Thus a 10MHZ crystal would pulse at the rate of 10,000,000 times per second In the transmitter circuit we use one RF module to send the data serially via radio frequency. Here in this project we use 433 MHz radio frequency module o send the data serially. Modulating frequency of the project is 433Mhtz and modulation type is ASK.

Whenever we want to send a data we use encoder ic to convert the parallel data into serial. This serial data is transmitting by the radio frequency module in air. For selecting a data base we use DIP switches. In actual practice we use internal data base. But in this project we use external data base to selection. Here we use four bit data with the help of DIP switches. Data is to be converted into serial with the help of the encoder IC. Here we use HT 12E encoder IC. HT12E encoder IC convert the parallel data into serial data.Pin no 1to 8 is address pin. Pin no 9 is ground pin. Pin no 10,11,12,13 is data insertion pin. We provide a 0 bit on the entire address pin. But it is not necessary. We select the address line pins as our requirement. For providing a data to data pins either we provide a 4 bit data from microcontroller or any other digital circuit or we connect DIP switches.
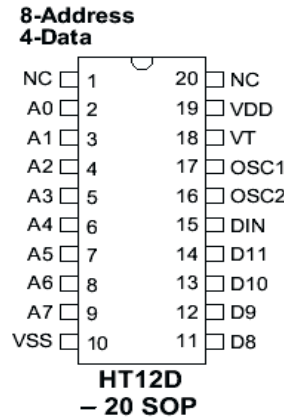


Pin no 14 is transmit control pin. We control the pin no 14 by connecting a pin no 14 to ground pin. When this pin is ground then only, data is to be transmit from the IC. Pin no 15 and 16 is the oscillator pin of the encoder IC. On this pin we connect a 1 M ohm resistor. Pin no 17 is data output pin. Data from this pin is connected to the input of transmitter module.
Data receive by the radio frequency receiver module

The receiver module is same as the frequency of transmitter module. Output from radio frequency module is further decoded by the decoder IC. Output of the decoder IC is further converted into parallel and proceeds to the microcontroller for further process. Or we get the data from decoder directly
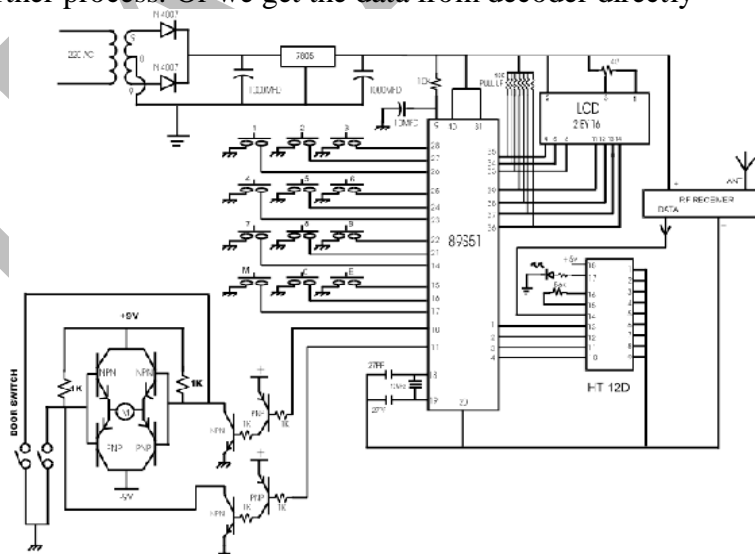


**Fig4-CIRCUIT DIAGRAM**

## IV. APPLICATIONS AND FURTHER SCOPE

A. Sustainable Development: Development with Economic and environmental benefits.

B. This will help to reduce accident rate

C. Electricity can be generated at large scale

D. No need for regular maintenance

E. This can be used at Highways (National Highways, State level Highways).

F. Each process will be controlled from one source station.

## V. ACKNOWLEDGEMENT

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