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Review on Building an Alcohol Detector using Arduino and MQ3 Sensor

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ABSTRACT:The purpose of our review paper is to represent our project which makes human driving safer and avoid accidents. This project is done by integrating alcohol sensor with Arduino board. Arduino processor ATmega328 is able to handle more functions than other microcontrollers. The alcohol sensor used in this project is MQ3 which to detect the alcohol content in human breath and in air also. Since sensor has high sensitivity of alcoholic gases. This project is fitted inside the vehicle. The project is designed for the safety of people which do drunk and drive.

KEYWORDS: Arduino, MQ3 sensor.

I.INTRODUCTION

Drink and drive is a very serious problem in india, which is very serious problems in near future .the system implemented by us aims at reducing the road accident. in the india. This review paper present the progress in using the alcohol detector ,a device that senses a change in the alcoholic gas content of the surrounding air these device is more commonly referred to as it analysis the alcohol content from person's breath. The system detects the presence of alcohol in the human breath.

II. LITERATURE SURVEY

In this review paper author describes the alcohol detection system for vehicle by using alcohol sensor and aeduino. [1] In this paper author discuss about the smart helmet system using alcohol detection for vehicle protection.[3] This paper introduces methods such as alcohol detection, heart beat rate monitoring system and personal identification system and discuss how they can be implemented to avoid accidents.[4] Instead of using Arduino board in this project they used microcontroller 16F877A [5]. This paper author discuss about driver's behavior, safety application & auto theft prevention system [6]. This paper represents accident vehicle automatic detection system by image processing [8]. In this paper they describe about body area sensing, alcohol detection craving [9]. In our paper we discuss about the alcohol detection system for vehicle using alcohol sensor MQ3 and buzzer using Arduino.

III. PROPOSED SYSTEM DEVELOPMENT

- **Sensor Module :**

It is a low cost semiconductor sensor which can detect the alcoholic gases at concentrations from 0.04 mg/L to 10 mg/L. The sensitive material used for this sensor is stannic oxide, whose conductivity is lower in clean air. It's conductivity increased as the concentration of alcohol increases. It has high sensitivity to alcohol. This module provides both analog and digital outputs. MQ3 alcohol sensor module can be easily interfaced with arduino uno.

Fig.1 MQ3 Sensor

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- **Microcontroller Module (Arduino Uno) :**

ATmega328P datasheet is used for Arduino uno microcontroller board. It has 6 changing physical quantities inputs and 14 digital input/output pins (of which 6 can be used as PWM outputs).

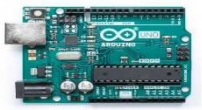

Fig.2 Arduino Uno

- **LED Lamp and Buzzer :**

The LED light shows indication of presence of alcohol in breath and buzzer get alarm for it.

Fig.3 LED and Buzzer

Working of system :

The MQ3 sensor detect the alcohol level in the breath and send to a analog to digital converter then it forwards to Arduino Uno. If the alcohol level is high which we set in controller, then the microcontroller gives command to LED and buzzer. This project also gives an option to control the ignition of vehicle if it set in vehicle.

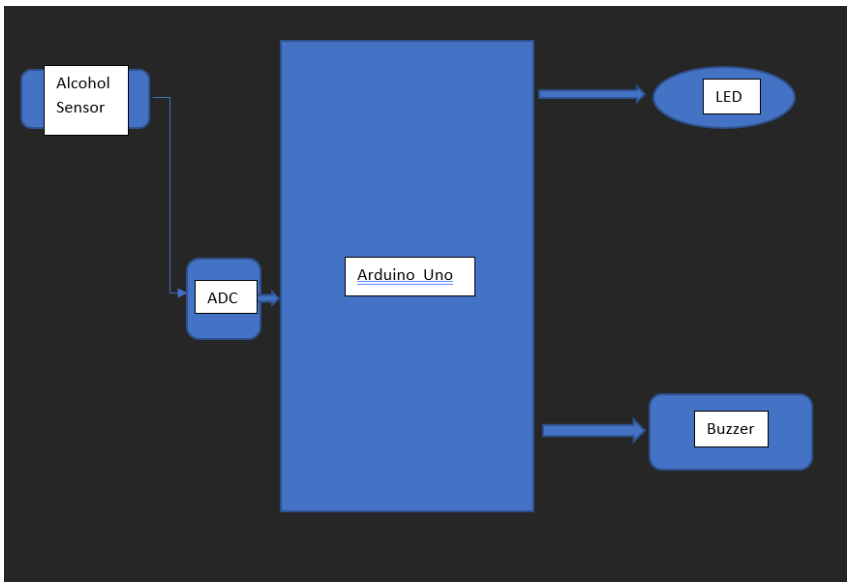

Fig.4 Block Diagram Of Proposed System

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IV. APPLICATION

There are some applications of alcohol detector they are presented below:

(a) It can be used to avoid drunk and drive case.
(b) It can be use by traffic police.
(c) This can also be used in various companies, organisations, mines to detect alcohol consumption of employees.

V.CONCLUSION

The main purpose of this study to develop an alcohol detection system or devise to avoid the drinking and driving cases. Also avoid car crashes and human deaths in these crashes.

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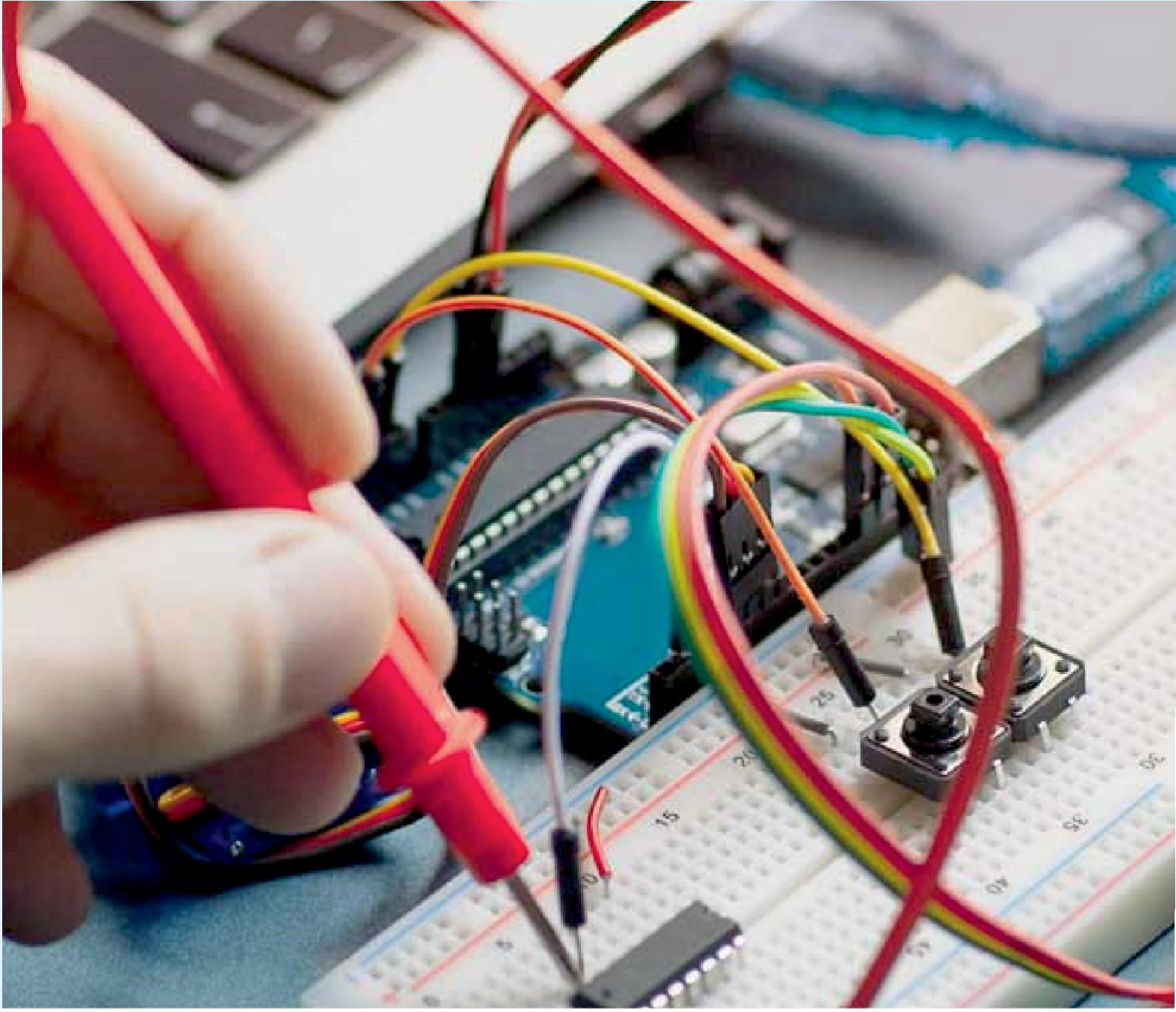

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