

SMART VEHICLES

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Abstract--Nowadays many accidents take place due driving when a person is drunk and high speed. So here we are with this project called SMART VEHICLE. In this project we are going to use Arduino to control speed of vehicle and check whether the driver is drunk or not .The aim of our research paper is to represent our project which makes human driving safer and to overcome accidents. This project is developed by integrating alcohol sensor with Arduino board. Arduino processor is able to handle more functions than conventional microcontrollers. The alcohol sensor used in this project is MQ3 which to detect the alcohol content in human breath. Since sensor has fine sensitivity range around 2 meters, it can suit to any vehicle and can easily be hidden from the suspects. This project is fitted inside the vehicle. The project is designed for the safety of people sitting inside the vehicle.

Keywords--Arduino UNO, Buzzer, Motion sensor, Mq3 alcohol sensor, LED.

Introduction

Drinking and driving, over speeding, pollution is always a big problem. This paper present the progress in using the alcohol detector and also tries to control speed. A device that will help in reducing the speed of the vehicle and senses a change in the alcoholic gas content of the surrounding air these device is more commonly referred to as a breath analysis, as it analysis the alcohol content from person's breath. The system detects the presence of alcohol in the vehicle and immediately locks the engine of vehicle

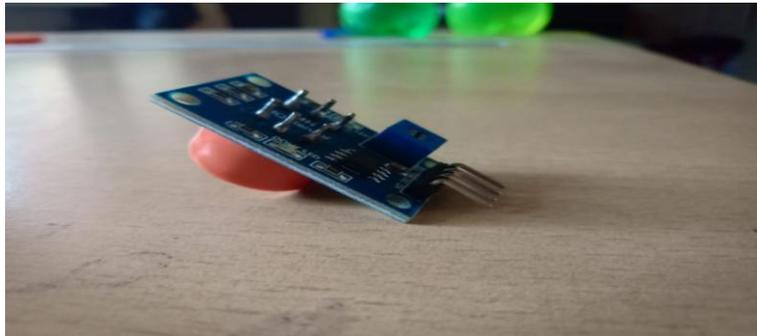
Important Components—

1. ARDUINO UNO

The Arduino UNO is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 Digital pins, 6 Analog pins, and programmable with the Arduino IDE (Integrated Development Environment) via a type B USB cable. It can be powered by a USB cable or by an external 9 volt battery, though it accepts voltages between 7 and 20 volts

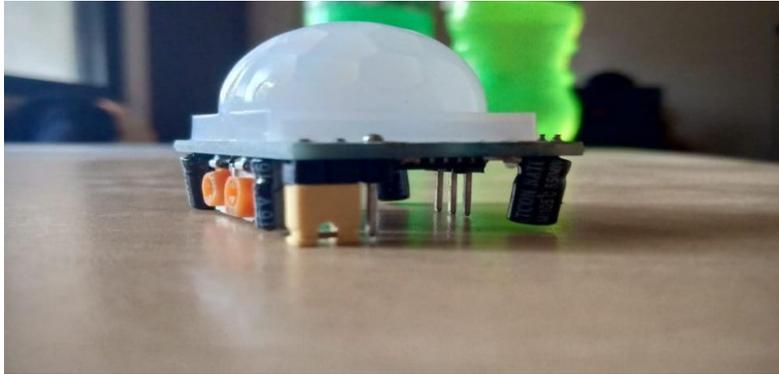


2. ALCOHOL DETECTOR



The analog gas sensor- MQ3 is suitable for alcohol detecting, this sensor can be used in a breath analyzer. The sensitivity can be adjusted by the potentiometer sensitive material of MQ3 gas sensor is SnO₂, which with lower conductivity in clean air. When the target alcohol gas exist, the sensors conductivity is higher along with the gas concentration rising, use of simple electro circuit, convert change of conductivity to correspond output signal of gas concentration.

3. MOTION SENSOR



Motion sensor is basically a device which senses the motions going on.

Motion Detection using **PIR Sensor**. A **PIR** or a Passive Infrared **Sensor** can be used to detect presence of human beings in its proximity. ... It consists of pyro electric **sensors** which introduce changes in their temperature (due to incident infrared radiation) into electric signal.

ADVANTAGES

1. To prevent accident due to drunk and driving, over speeding etc.
2. Easy and efficient to control speed of vehicle and test the alcohol content in the body.
3. Quick and accurate results.
4. Helpful for police and provides and automatic safety systems for cars and other vehicles as well.

APPLICATIONS

1. "SMART VEHICLE" can be used in the various vehicles for detecting whether the driver as consumed alcohol or not.
2. This project can also be used in various companies or organizations to detect alcohol consumptions of employees.

FUTURE SCOPE

1. The alcohol detection can used in vehicles in nearest future.
2. This system can be used by the automobile manufacturers and integrate it in the manufacturing design process of vehicles.

CONCLUSION

Smart vehicle project which could come in act in nearest future. This project has great advantages. This project could reduce the amount of accidents due to over speeding and due to drunken drivers and could bring safe roads for people.

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REFERENCES

- 1.What is alcohol sensor?
<https://www.elprocus.com/mq-135-alcohol-sensor-circuit-and-working/>
- 2.<https://www.theengineeringprojects.com/2017/08/pir-sensor-arduino-interfacing.html>
3. What is Arduino UNO?
https://en.wikipedia.org/wiki/Arduino_Uno