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Alcohol Detection Robotic Car

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Abstract: *"Prevention is better than cure." This quote perfectly summarizes the purpose of the alcohol engine lock system with MQ3 sensor. This system is a proactive approach to prevent accidents caused by drunk driving, rather than waiting for an accident to happen and then trying to remedy the situation. The use of technology in preventing drunk driving has proven to be an effective tool in saving lives and preventing injuries on the road. The implementation of the alcohol engine lock system with MQ3 sensor has been met with some resistance from those who feel that it in fringe son their personal freedoms. However, it is important to remember that the safety of all road users should be a top priority. The use of the system can help reduce the number of accidents caused by drunk driving and ultimately save lives. It is a small price to pay for the safety of all road users. In conclusion, the alcohol engine lock systemwithMQ3 sensor is a critical technology in preventing alcohol-related accidents on the road. This system has been successfully implemented in various countries around the world and has proven to be an effective tool in reducing the number of accidents 4 caused by drunk driving. As the famous saying goes, "Safety doesn't happen by accident." It is up to all of us to take proactive measures to ensure the safety of ourselves and others on the road.*

Keywords: 8051, Motor, Alcohol Sensor

I. INTRODUCTION

The technology of electronics plays a major role in the field of automation and modern machine shops and space robots. The aim is to design and develop a control system based intelligent electronically controlled automotive system. One major reason of deaths on Indian roads is accidents due to drunken driving. This happens
Be cause of drunk people being able to take control of vehicle even after being drunk. In our project, we propose to solve this problem by designing a system
which automatically switches off the vehicle's engine whenever alcohol of certain quantity is detected in the driver's breath. As soon as the presence of alcohol is
detected, the microcontroller stops the engine of the vehicle and a siren is blown to alert nearby people to convey that something is wrong with the vehicle and
a message "Alcohol Detected" is flashed on the LCD screen which is installed in the system, so that nearby people can interpret gravity of the situation and inform the concerned authorities to avoid any kind of incident**.**
This system when implemented in vehicles will not only avoid the deaths and property loss due to
drunken driving, but will also help in reducing the total number of accidents which occur due to this. Moreover, people in other vehicles or pedestrians will be much more safe because of the vehicle being stopped right away

II. GENERAL BLOCK DIAGRAM

2.1 PROJECT DISCRIPTION

Using 8051 microcontroller, we propose to design a system consisting of an alcohol sensor,MQ3, to detect the presence of alcohol by analyzing a person's breath and shutting down the vehicle's engine when a specific amount of alcohol is detected to prevent any kind of mishap or accident that may occur due to the driver taking control over the vehicle. Hence, drunken driving is controlled, thereby minimizing the loss of life and property. The system consists of an 8051 microcontroller, which acts as a controller for every component which is used. The microcontroller is connected to a LCD, an alcohol sensor, a buzzer, a DC motor, a LED and is powered by a DC power supply of 5 volts.

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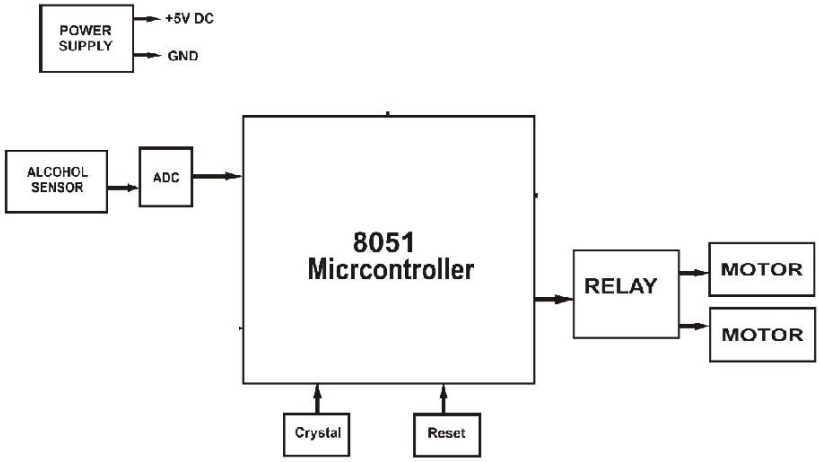
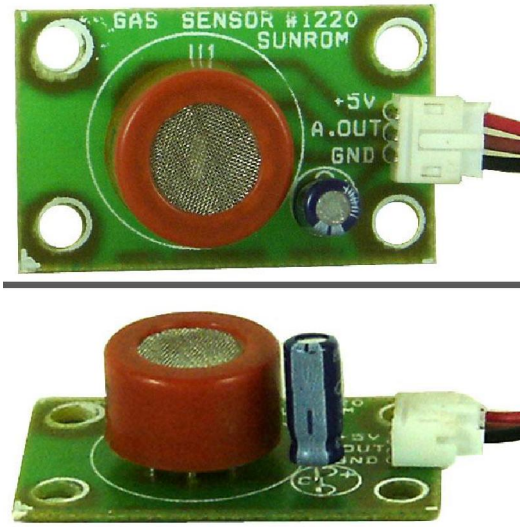
As soon as the system is ON, the LCD displays "No Alcohol detected" and the vehicle engine gets started. As soon as the alcohol sensor detects alcohol, the LED starts to blink, the buzzer starts, the engine is switched OFF and the LCD displays "Alcohol Detected"



III. ALCOHOL SENSOR



IV. PRINTED CIRCUIT BOARD

PCB means printed circuit board PCB is one of the most important elements in any electronic system. They accomplish the interconnection the between component mounted on them in particular manner PCB consist of conductive circuit pattern which is applied to one or both sided of an insulating base copper is most widely used for conductor material. Aluminum nickel, silver, brass is used for same special application.

The thickness of conducting material depends upon the current carrying capacity of circuit. Thus a thicker conductor layer will have mare current carrying capacity once the PCB is manufactured the current carrying capacity is depends on which of conductor track.

4.1 FUNCTION:

The printed circuit board usually serves there distinct functions are as follows:

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- It provides mechanical support for the component mounted on it.
- It provides necessary electrical interconnections
- It acts as a heat sink i.e. it provides a conduction path leading to removal of most of the heat generate in the circuit.

4.2 ADVANTAGE of PCB

Over the conventional wire method:

- PCB's have controllable and predicable electrical mechanical properties.
- Rapid production is possible.
- Time is saved since it avoids wiring connections production to another
- Weight is reduced.
- Soldering is done in one operation instead of individual connection between component and wires.
- Cost is less.

V. FUTURE DEVELOPMENTST

The development of alcohol detectors and engine locking systems is an ongoing process, and there are several potential future developments that could enhance their effectiveness and functionality. Here are some of the possibilities: Integration with biometric sensors: Future alcohol detectors and engine locking systems may incorporate biometric sensors to detect specific physical characteristics that indicate impairment, such as changes in pupil size, body temperature, or heart rate. Real-time monitoring and reporting: Advanced alcohol detectors and engine locking systems maybe capable of transmitting data in real-time to law enforcement agencies or other relevant parties, enabling immediate action to be taken if a driver is found to be impaired. Improved accuracy: New sensor technologies maybe developed that can detect alcohol at lower levels or more accurately differentiate between alcohol and other substances, such as mouthwash or hand sanitizer

VI. CONCLUSION

- This mechanism can be used in all type of vehicles; an additional installation cost would provide a safer environment.
- Our main aim behind the designing of this system is to improve the prevention technique of accidents and reducing the hazard from accidents like damage of vehicle, injury of human etc.

VII. ADVANTAGES

- System able to increase the pre-crash safety.
- System able to provide more safety to the passengers.
- System plays an important role to save human Life in road accidents

VIII. APPLICATIONS

- This system may be applicable in all types of light vehicles like cars, Rickshaws, Tempos.
- This system also successfully installed in the heavy vehicles like buses, trucks, trailers, etc.

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