

# Alcohol sensing alert and vehicle locking system

Lavanya M<sup>1</sup>, Monika A M<sup>1</sup>, Muktha J S<sup>1</sup>, Neha C N<sup>1</sup>, Dr. T P Surekha<sup>2</sup>

Final year students<sup>1</sup>, Professor<sup>2</sup>

Department of Electronics and Communication Engineering, Vidyavardhaka college of Engineering, Mysuru, Karnataka, India

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**Abstract** - The most common cause of traffic accidents is drunk driving. Because the inebriated driver is in a state of insanity, his or her driving causes discomfort to other road users as well as harm to the drunken driver's life and property. In this review paper, several writers created a mechanism that locks the vehicle's wheels when the driver is inebriated. The alcohol sensor is connected to the controller and serves as the system's input in the form of alcohol detection in the vehicle. The alcohol sensor will be placed near the driver and will analyse the driver's breath to detect the presence of alcohol. The device displays an alcohol detection note on the LCD screen, sounds an emergency siren, and stops the car if any trace of alcohol is detected beyond the stated limit. If the sensor detects alcohol when the engine is started, the system will lock the wheels and the vehicle will not move any further. This review study outlines a method for avoiding inebriated driving accidents, hence reducing the likelihood of any disasters. We can watch the driver and establish whether he is intoxicated or not even before he starts the car by putting sensors into the vehicle. Many accidents occur nowadays as a result of the driver or the person operating the vehicle consuming alcohol. As a result, drunk driving is a major cause of accidents in practically every country on the planet. The purpose of the alcohol detector in the car is to ensure the safety of those who are seated within. In the event that the driver has ingested alcohol, the alcohol detector with wheel locking system project aids in vehicle control.

Key Words: **Arduino, LCD screen, alcohol sensor, locking system**

## 1. INTRODUCTION

According to the current situation, drunk driving is the cause of the majority of road accidents. The crime or infraction is driving when inebriated or drunk. Drivers who consume alcohol are in a state of insanity, and as a result, rash driving occurs on highways, endangering the lives of everyone on the road, including the driver. The quantity of drunkenness caused by alcohol is normally evaluated by testing blood alcohol concentration when a person consumes alcohol. The percentage of alcohol in a person's blood is referred to as BAC. 0.08 percent is regarded legally inebriated, whereas 0.08-0.40% is considered severely impaired. According to the NCRB research, alcohol driving is a major cause of traffic accidents. It also claims that intoxicated driving is

responsible for 99.9% of accidents that occur outside the municipal borders. In India, it is currently illegal for drivers to drink and drive. However, because manual testing of drink and drive has become a laborious task, the engine system has been automated. In order to meet new challenges, every system is now automated. Automated systems nowadays have less manual procedures, are more flexible, reliable, and accurate. As a result, we suggest a strategy to prevent such occurrences. Our device will use an alcohol sensor to monitor the driver's breath. It will be located near the driver. If a driver attempts to drive while inebriated, the system detects the presence of alcohol in his or her breath and locks the vehicle's wheels. In another scenario, if the driver is not drunk when the car is started but becomes so after the engine has started, the system will detect the presence of alcohol in the driver's breath and lock the vehicle's wheels, preventing the vehicle from accelerating further. To showcase the concept, we used an Arduino controller to interact with an alcohol sensor, as well as an LCD screen and a motor. The alcohol sensor continuously analyses the driver's breath and delivers a signal to the controller in this case. Only when the amount of alcohol consumed by the driver of a vehicle falls below the specific value are the wheels freed.

## 2. METHODOLOGY

Over the years, alcohol detection in automotive systems has improved, potentially resolving drunken driving accidents all over the world. As a result, our project, titled alcohol detection alert and car locking system, is well suited to the situations that arise in congested cities and towns, as well as to the prevention of drunken driving in all cities and towns across the world. To showcase the concept, we used an Arduino controller to interact with an alcohol sensor, as well as an LCD screen and a motor. The alcohol sensor continuously analyses the driver's breath and delivers a signal to the controller in this case. Only when the amount of alcohol consumed by the driver of a vehicle falls below the specific value are the wheels freed.

According to the Fig1, Arduino UNO is a main controller board that receives electricity from a power source, receives input from a MQ3 sensor, and outputs to LED, Buzzer, and Driver IC. If alcohol is detected in the driver's breath, the LED and buzzer will illuminate, the DC motor will stop spinning, and the LCD will indicate the percentage of alcohol.



Fig1-Block Diagram of implemented system

### 3. ADVANTAGES

Low cost, Automated operation, Low power consumption and it provides an automatic safety system for cars and other vehicle as well.

### 4. CONCLUSION

In many of the publications cited above, several methods to the drunken and drive problem have been offered. They used a microcontroller as the main controller in the first paper we mentioned above, with which all other components were interfaced. To detect the presence of alcohol in the driver's breath, they employed an Arduino UNO microcontroller and a MQ3 alcohol sensor in the remaining publications. Whenever the engine is started, the sensor detects the presence of alcohol in the driver's breath or in the air around the sensor, and the engine is turned off immediately if the driver is discovered to be inebriated.

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