

# A Survey Paper on Air Pollution Detection and Controlling Vehicle System

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**Abstract**— Nowadays vehicle is an important part of everyone life, Vehicle is needed to save a time. As the vehicle good aspects, it's having an emission but it becomes a problem when it crosses the threshold level. Due to the improper maintenance vehicle causes the partial combustion of fuel & it causes pollution. This emission can be controlled by the automated control system for pollution detection in the vehicle. This emission of hazards gases can be controlled by the sensor system. The work of sensor is to detect level of air pollution. If the pollution level goes beyond the threshold level there will be buzz which indicates that the vehicle will stop after some time & a certain time is given for the driver to park the vehicle.

**Keywords:** Air pollution, sensor, buzzer

## I. INTRODUCTION

The concept of detecting the level of pollution and indicating to the driver is implementing the project. There is an increasing level of pollution leading to several environmental problems. There will be a huge population who do not care about the population from their vehicle which has already resulted in environmental problems such as ozone layer depletion and human health problems. Hence the system will be highly beneficial. Every vehicle has its emission of gases, but the problem occurs when the emission is beyond the standardized values. The primary reason for this breach of emission level is the incomplete combustion of fuel supplied to the engine. This emission from vehicles definitely can be controlled. The incomplete combustion in the engine of a vehicle leads to the emission of different gases contributing to an increase in the pollution and adversely affecting the environment. Detection and control of these gases is an important work. This emission from vehicles definitely can be controlled. We aim to build an automated control system for emission level control of the vehicle. The carbon sensor senses the carbon content and gives it to the Microcontroller to check the maximum percentage of carbon content released by vehicles. So the controller checks the carbon content, if it exceeds the threshold level the system gets triggered and the engine comes to halt state.

### A. Existing System

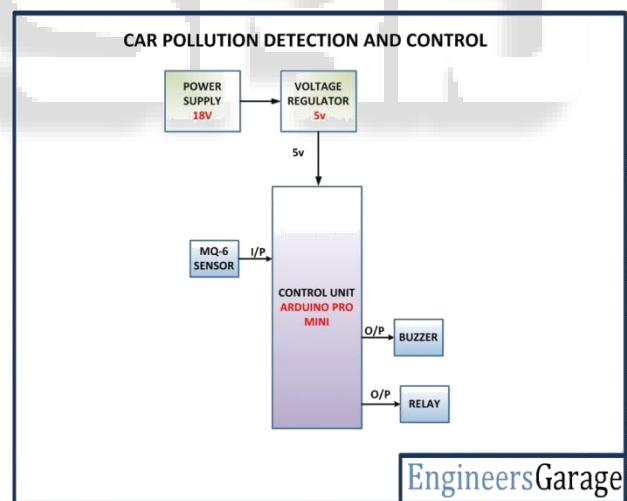
Every vehicle has its emission of gases, but the problem occurs when the emission is beyond the standardized values. The reason of emission level is the incomplete combustion of fuel supplied to the engine which is due to the improper maintenance of vehicles. This emission from vehicles cannot be definitely can be controlled. The project aims to monitor and control the pollutants in the vehicle by using the pollution control circuit. vcontroller. It is a real-time work where a demo application has been made in which the ARM 7 processor is used and a controller board is made where all these devices get integrated and work accordingly.

The vehicle is controlled by this circuit. When a vehicle attains a some threshold air pollution level then the ignition of engine gets switched off and an SMS is generated and sent to the pre-defined number stored in the memory through the GSM module. The GPS module is used to locate the vehicle position where it is halted. This paper demonstrates an effective utilization of technology by which we save our environment by controlling the pollution of vehicles. members to react rapidly

### B. Proposed System

MQ-7 sensor senses carbon monoxide .it gives a signal to condition. the output of the carbon gas sensor is in the form of currents so we have used the current to voltage converter so in this we used simple resistor. The current passes through this resistor and we will get voltage proportional to current. Then we use a microcontroller to check the percentage of carbon content released by vehicles. LCD is used to display the ignition is on or off. After that relay is used to control the ignition of the car. To drive the relay we are using relay driver.

## II. SYSTEM BLOCK DIAGRAM



## III. MODULE DESCRIPTION

- sensor
- signal conditioning
- microcontroller
- LCD
- Relay driver

### A. Module Description

#### 1) MQ-7 Sensor

MQ-7 sensor senses carbon monoxide .it gives a signal to condition. the output of the carbon gas sensor is in the form of currents so we have used currently to voltage converter Signal conditioning

The output of the Carbon Gas sensor is in the form of current. So we have to use the current to voltage converter. For that purpose, we had used a simple resistor. The current passes through this resistor and we will get voltage, proportional to current

2) *Microcontroller*

A microcontroller is used to check the percentage of carbon content released by vehicles

3) *LCD*

The LCD is used to display the ignition is on or off.

4) *Relay Driver*

relay is used to control the ignition of the car.

#### IV. CONCLUSION

The concept of detecting the level of pollution and indicating to the driver is implemented in this project. There is an increase in the level of pollution over the decades, leading to several environmental problems. There will be a large population, who do not take care of the pollution from their vehicles seriously, which has already resulted in several environmental problems such as ozone layer depletion and human health problems and so on. Hence the system will be highly beneficial incurring this problem

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