

Fuzzy Based Model for Accident Prevent System

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Abstract: Now a day, due to status symbol everyone is trying to purchase their own four wheelers. All the vehicles run by Petrol, Diesel, and CNG etc. Mostly the people prefer the AC vehicle, in these vehicles' the rate of fuel consumption is high and also extracting huge amount of heat from the atmosphere. It often happens during rainy season, in heavy traffic area the pollution level is very high if the engine is ON for long time the vehicles are on standing mode. Then due to this reason the toxic gas is emitted inside the vehicle that is injurious to the health of human.

In this paper, we are planned to fuzzy logic to make a one gazette which controls the emission of toxic gases, smoke inside the vehicle and avoid drunken drive. Sometimes during the long drive or whole night driving driver may feel sleepy which is also dangerous for passengers, through the blinker system and eye lid blinking if the count is less ,then auto alarm which may indicate the toxic gas ,smoke level through alarm sound must be made alert for drivers and passengers. And if the driver is drinking then through the control unit the vehicle door is not opening and if door is not locked then engine is not ignited. If the toxic gas level is increasing then through auto control system the window will open while the level is decrease then it may be closed.

I. INTRODUCTION

A sensor is a converter that measures a physical quantity and converts it into a signal which can be read by an observer or by an (today mostly electronic) instrument. For example, a mercury-in-glass thermometer converts the measured temperature into expansion and contraction of a liquid which can be read on a calibrated glass tube. A thermocouple converts temperature to an output voltage which can be read by a voltmeter. For accuracy, most sensors are calibrated against known standards.

Sensors are used in everyday objects such as touch-sensitive elevator buttons (tactile sensor) and lamps which dim or brighten by touching the base. There are also innumerable applications for sensors of which most people are never aware. Applications include cars, machines, aerospace, medicine, manufacturing and robotics.

A sensor is a device which receives and responds to a signal when touched. A sensor's sensitivity indicates how much the sensor's output changes when the measured quantity changes. Vehicle accidents are most common if the driving is inadequate. These happen on most factors if the driver is drowsy or if he is alcoholic. Driver drowsiness is recognized as an important factor in the vehicle accidents. It was demonstrated that driving performance deteriorates with increased drowsiness with resulting crashes constituting more than 20% of all vehicle accidents. But the life lost once cannot be re-winded. Advanced technology offers some hope avoid these up to some extent.

This project involves measure and controls the eye blink using IR sensor. The IR transmitter is used to transmit the infrared rays in our eye. The IR receiver is used to receive the reflected infrared rays of eye. If the eye is closed means the output of IR receiver is high otherwise the IR receiver output is low. This to know the eye is closing or opening position. This output is give to logic circuit to indicate the alarm. The main driver behind this research relates to real cases which occurred in recent years. CO leakage normally happens due to one of two events. First, the original exhaust system has been altered for a certain reason. Usually, a standard car has a long exhaust system but modified exhaust systems are usually a bit shorter. Due to this, it is believed that the CO manages to seep into the cars inner chamber through its extractor exhaust system more easily compared to a standard exhaust. Second, the air conditioning system in a car operates by filtering air from the outside before it is used. However, it is recommended not to turn on the air condition system while the engine idles or while the car is stall. Car air conditioners may gather CO gas while the engine idles. The possible conditions for gas leakage. The breath alcohol tester is an electronic device that is used to measure and test. The breath alcohol tester is The breath alcohol tester is an electronic device that is used to measure and test the blood alcohol content in a person's blood stream. Commonly known as 'breathalyzer' which means breath analyzer, the breath sample of a person is examined by the device through an alcohol sensor to check its alcohol content and displays its output in units of blood alcohol concentration (BAC). The detected amount is shown by means of BAC percentages through display components such as LCD display or seven segment decoder.

This project involves controlling accident due to unconscious through Eye blink. Here one eye blink sensor is fixed in vehicle where if anybody loses conscious and indicate through alarm. A car simulator study was designed to collect physiological data for validation of this technology. Methodology for analysis of physiological data, independent assessment of driver drowsiness and development of drowsiness detection algorithm by means of sequential fitting and selection of regression models is presented. The developments of gas detection sensors such as for methane, propane, or any harmful gases in the automotive industry have been

very encouraging. Such examples include the monitoring of carbon dioxide (CO₂) concentration in cabin. A high-precision spectroscopic gas sensor measuring CO₂ for harsh environmental conditions of automotive applications was developed and investigated. Sensors for explosive gas leakage recognition and a compact wireless gas sensor using a carbon nano tube/PMMA thin film chemi resistor were also recently developed. Such examples illustrate the importance of gas detection systems as embedded components in engine management systems for the safety of vehicle operators and cabin passengers.

Initially, the breath alcohol detector's usages were quite limited. However, as the number of drunken driving cases has increased in recent years, extensive research and developments in applying these devices in vehicles to prevent individuals from driving vehicles after consuming an excessive amount of alcoholic beverages. Subsequently, in the United States of America, when the nation's drunk driving related accident cases reached a level worthy of concern, drunk driving or better known as DUI (Drive Under Influence) offenders were required to install an alcohol detection system in their vehicles. These detectors require the vehicle drivers to produce a breath sample to examine for excess alcohol presence before the engine is allowed to start. A breath alcohol detector which controls the ignition switch using microcontroller was developed. Instead of just indicating and displaying the BAC percentage, the tester is programmed to control the ignition switch, as well as an alarm and a number LEDs. The fundamental components of this system are the MQ-3 alcohol sensor, PIC16F877A microcontroller unit, 2x16 characters LCD alphanumeric display and ignition switch circuit.

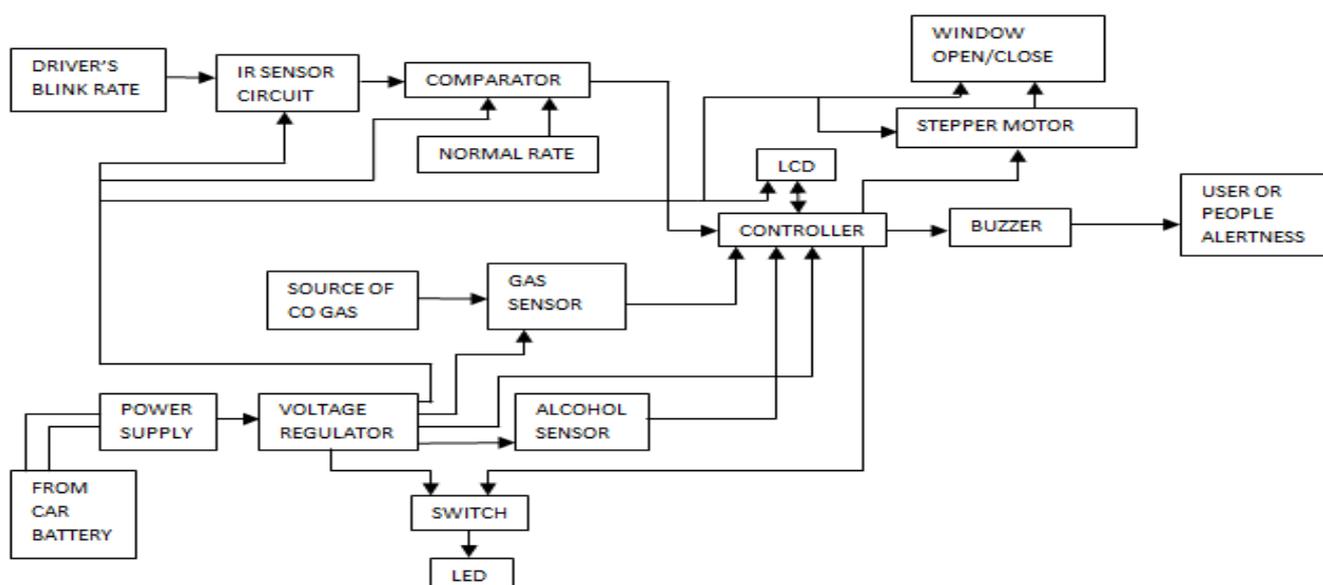
II. SYSTEM DESIGN REQUIREMENT

Microcontroller ,gas sensor , IR sensor, alcohol detector , transformer , voltage regulator, power supply , LCD and buzzer , capacitor ,resistor, bread board ,keil c cross compiler ,flash magic .

III. SYSTEM DESIGN

we are making three application in one gazette in this gazette first system is poisons' gas detecting and we using alcohol detecting sensor and to find the low eye blink count of driver in the system give alert to the passenger .

IV. BLOCK DIAGRAM OF THE SYSTEM



V. CONCLUSION

The proposed system tested for a small area (3meters) of smoke, alcohol, gas, eye lid blinking. It is working effectively. In future planning we are using GPS tracking, which area is car going on it send message to user mobile. Using this system in toll plaza, check post and we are using the system in automobile industries.

Reference:

- [1]. Win, D. T. 2006. Breath Alcohol Testers. Prevent Road Accidents. Faculty of Science and Technology, Assumption University Bangkok, Thailand.
- [2]. Steven, C., White, & R. F. Wells. 2006. Vehicle Power Inhibiter.
- [3]. Michael, W. W. & D. E. 2010. DeVries. Ignition Interlock Breathalyzer.

- [4]. Park, E. J. 2007. Sensor Report: MQ-3 Alcohol Sensor. Sensor Workshop. [Online] www.sensorworkshop.blogspot.com
Blood Alcohol Content. Available: http://en.wikipedia.org/wiki/Blood_alcohol_content
- [5]. New Straits Times. 2008. "Couple Died Due to Carbon Monoxide Gas". 2/1/2000 .Retrieved August 1, 2008 from <http://www.nst.com.my>
- [6]. Arkib. 2000 (Sept 10). "Izzayu meninggal selepas tiga hari tidak sedarkan diri". Utusan Malaysia
- [7]. (Malay Language). Retrieved August 1, 2008. <http://www.utusan.com.my>.
- [8]. Sinyang, A. 2007. "Pegawai polis, wanita ditemui mati dalam BMW". Utusan Malaysia (Malay Language). Retrieved August 1, 2008. <http://www.utusan.com.my>
- [9]. Arkib. 2008 (April 1). "Demi cinta, pasangan mati bersama". Utusan Malaysia (Malay Language). Retrieved August 1, 2008. <http://www.utusan.com>.
- [10]. [Police breathalysers - type approved, www.drinkdriving.org](http://www.drinkdriving.org). Retrieved 16 January 2013.