

Design & Development of Toxic Product Detector Barricade

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Abstract: The term “Smokeless Tobacco” refers to the consumption of unburned tobacco, in the form of chewing, spitting, dipping, and snuff. Consumers chew the tobacco in the mouth and spit out the juice that builds up. Nicotine and other constituents are absorbed in the lining of oral cavity. People of many regions, including India, Pakistan, other Asian countries, and North America, have a long history of smokeless tobacco use. Approximately 28 chemical constituents present in smokeless tobacco are carcinogenic in nature, among which nitrosamine is the most prominent. According to the National Report of Global Adult Tobacco Survey conducted in India and Bangladesh, the current prevalence of smokeless tobacco use is 25.9 and 27.2%, respectively. There are 30 different types of smokeless products available in these countries, including zarda, which contains dried and boiled tobacco leaves, limes, areca nut, additives, spices, and tannins. Oral cancer accounts for 30 to 40% of cancer cases reported in India, and the most obvious cause is the extensive use of tobacco products, consumed via smoking and/or smokeless chewing products.

I. INTRODUCTION

Smokeless Tobacco” refers to the consumption of unburned tobacco, in the form of chewing, spitting, dipping, and snuff. Consumers chew the tobacco in the mouth and spit out the juice that builds up. Nicotine and other constituents are absorbed in the lining of oral cavity. There are 30 different types of smokeless products available in these countries, including zarda, which contains dried and boiled tobacco leaves, limes, areca nut, additives, spices, and tannins. This leads to further DNA damage and, eventually, oral cancer. So we have designed a system which will detect if the person has consumed any kind of chewable tobacco or not. Gas leak detection methods became a concern after the effects of harmful gases on human health were discovered. Before modern electronic sensors, early detection methods relied on less precise detectors. Through the 19th and early 20th centuries, coal miners would bring canaries down to the tunnels with them as an early detection system against life-threatening gases such as carbon dioxide, carbon monoxide and methane. The canary, normally a very songful bird, would stop singing and eventually die if not removed from these gases, signaling the miners to exit the mine quickly.

Smokeless Tobacco:



Smokeless tobacco is a tobacco product that is used by means other than smoking. Their use involves chewing, sniffing, or placing the product between gum and the cheek or lip. Smokeless tobacco products are produced in various forms, such as chewing tobacco, snuff, snus, and dissolvable tobacco products. Smokeless tobacco products typically contain over 3000 constituents. All smokeless tobacco products contain nicotine and are therefore highly addictive. Quitting smokeless tobacco use is as challenging as smoking cessation.

Smokeless tobacco is much lower on the risk continuum than combusted products but varies in risk within that class of products (e.g., low nitrosamine Swedish-type snus versus other smokeless tobacco with high nitrosamine levels). It is estimated the safety risk of smokeless tobacco is similar to that of electronic cigarettes. There is no safe level of smokeless tobacco use. It is correlated with a number of adverse effects such as dental disease, oral cancer, esophagus cancer, and pancreas cancer, as well as adverse reproductive effects including stillbirth, premature birth and low birth weight. Smokeless tobacco products contain cancer-causing chemicals. Approximately 28 chemical constituents present in smokeless tobacco are carcinogenic in nature, among which nitrosamine is the most prominent. Smokeless tobacco accounts for an abundance of deaths globally with a significant proportion of them attributed to Southeast Asia.

Effects of smokeless tobacco:

Creative advertising by tobacco companies and lack of accessible information for public leads to many gutkha users being unaware of the dangers it can bring. Over 25% of India's population use tobacco products including cigarettes and multiple form of smokeless tobacco users in world. The poorest populations are greatly affected due to detrimental effects of its use and subsequent cost of medical care

Alcohol:



II. LITERATURE SURVEY

Smokeless tobacco (paan and gutkha) consumption, prevalence, and contribution to oral cancer Kamal Niaz, Faheem Maqbool, Fazlullah Khan, Haji Bahadar, Fatima Ismail Hassan, Mohammad Abdollahi Smokeless tobacco consumption, which is widespread throughout the world, leads to oral submucous fibrosis (OSMF), which is a long-lasting and devastating condition of the oral cavity with the potential for malignancy. In this review, we mainly focus on the consumption of smokeless tobacco, such as paan and gutkha, and the role of these substances in the induction of OSMF and ultimately oral cancer. The list of articles to be examined was established using citation discovery tools provided by PubMed, Scopus, and Google Scholar. The continuous chewing of paan and swallowing of gutkha trigger progressive fibrosis in submucosal tissue. Generally, OSMF occurs due to multiple risk factors, especially smokeless tobacco and its components, such as betel quid, areca nuts, and slaked lime, which are used in paan and gutkha. The incidence of oral cancer is higher in women than in men in South Asian countries. Human oral epithelial cells experience carcinogenic and genotoxic effects from the slaked lime present in the betel quid, with or without areca nut. Products such as 3-(methylnitrosamino)-proprionitrile, nitrosamines, and nicotine initiate the production of reactive oxygen species in smokeless tobacco, eventually leading to fibroblast, DNA, and RNA damage with carcinogenic effects in the mouth of tobacco consumers. The metabolic activation of nitrosamine in tobacco by cytochrome P450 enzymes may lead to the formation of N-nitrosornicotine, a major carcinogen, and micronuclei, which are an indicator of genotoxicity. These effects lead to further DNA damage and, eventually, oral cancer.

Working Principle of Arduino and Using It as A Tool for Study and Research

Department of Electronics and Communication Engineering, Gujarat Technological University, Ahmedabad, India. Arduino is an open-source microcontroller which can be easily programmed, erased and reprogrammed at any instant of time. Introduced in 2005 the Arduino platform was designed to provide an inexpensive and easy way for hobbyists, students and professionals to create devices that interact with their environment using sensors and actuators. Based on simple microcontroller boards, it is an open-source computing platform that is used for constructing and programming electronic devices.

Estimating Gas Concentration using Artificial Neural Network for Electronic Nose

E-nose is a sensor used to detect the existence of gas in the air. Some types of sensors have the ability to detect certain gas and also has different datasheet. Slope deflection is the method to determine the suitable sensor for the experiment. E-nose with MQ Family produces the ratio of existing air and base line air resistance, and it is usually equipped with a datasheet containing the consecration of detected gas in a certain value of the sensor to convert the output to the concentration of detected gas. The ratio is used to estimate the concentration of a gas. In this paper, Artificial neural network is used to estimate the concentration of a gas in the air based on the ratio. Providing the accurate calculation of the ratios is very important to increase the electronic nose performance, and the result of this experiment showed that the Artificial neural network method achieves a good performance with smaller RMSE of 0.0433 compared with the existing methods.

Identification of alcoholic breath analyzer using MQ3 Alcoholic Sensor

Now-a-days the major cause for accidents is due to drink and drive, Road accidents have become a major concern these days. This paper mainly focuses on safety of the driver under the influence of alcohol. So, we propose Secure Alcoholic Breath Analyzer Authentication. System to reduce the road accidents caused by drunken and driving. In a recent surveys it is stated that many of the people to lose their lives every day. It is because of drunken driving. The Major causes of accidents are based on two problems that are excessive speed and drunken driving. These kinds of accidents not only affect the life of a person driving the car but also show the negative impact and effect on the society. There are many of the cases which are being reported stating that the innocent people walking on the street or on foot path is also victims of the alcohol drunken driving accidents. The traditional system of the society is totally depends upon the police officer that enable them to stop the vehicle and check for the alcohol limit of the driver's breath. If the certain amount of alcohol percentage is detected the driver will be penalized, so it is difficult for the police officers to monitor each and every vehicle in the society. In this situation to avoid the alcoholic driving from the society the authentication can be performed by using Micro controller and MQ3 alcohol sensor.

Summary of literature**III. METHODOLOGY****Design and Development:****Selection of Mechanism**

We selected the mechanism of barricade and rack and pinion mechanism for up and down motion of sensor box.

Selection of Material

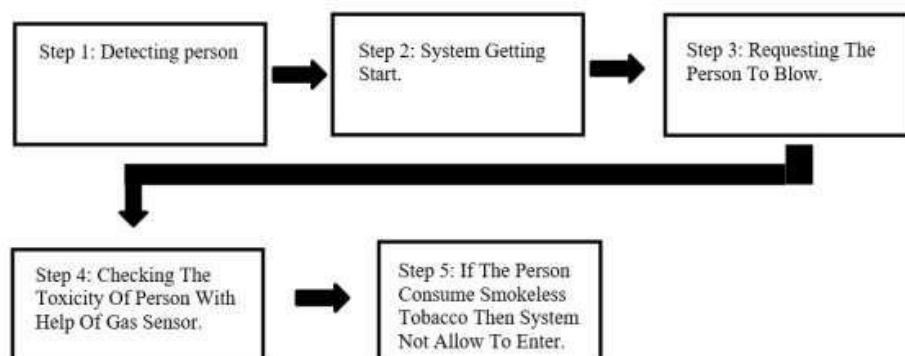
As the wood is light weight material and have a strength, we decide to use it for making structure. We use stainless steel hollow pipes in barricade structure.

Selection of Dimension

We select height of structure and length of pipes according to approximate height of person.

Selection of Processing

1. Analysis of components required for project
2. After analyzing the components, we are going to conduct market survey.
3. After finding the required components we purchased it
4. After that Starting designing actual model

IV. WORKING PROCESS

STEP 1: For operation of setup we need to switch ON by manually the project setup Using Push Button switches

STEP 2: After switching on the machine gets LED blinks which fitting in structure which indicates that the machine has started

STEP 3: Once machine has started the machine guide the person what to do? The person follow the guidelines which guiding from machine.

STEP 4: After blowing in sensor box, the machine checking the toxic level of person its take 5-10 sec.

STEP 5: After checking the toxicity level of person machine shows the result in the LED light. If he or she is not consume anything the green light will be blink. And if he or she consume any smokeless tobacco then the red light will be blink.

Designing of setup:

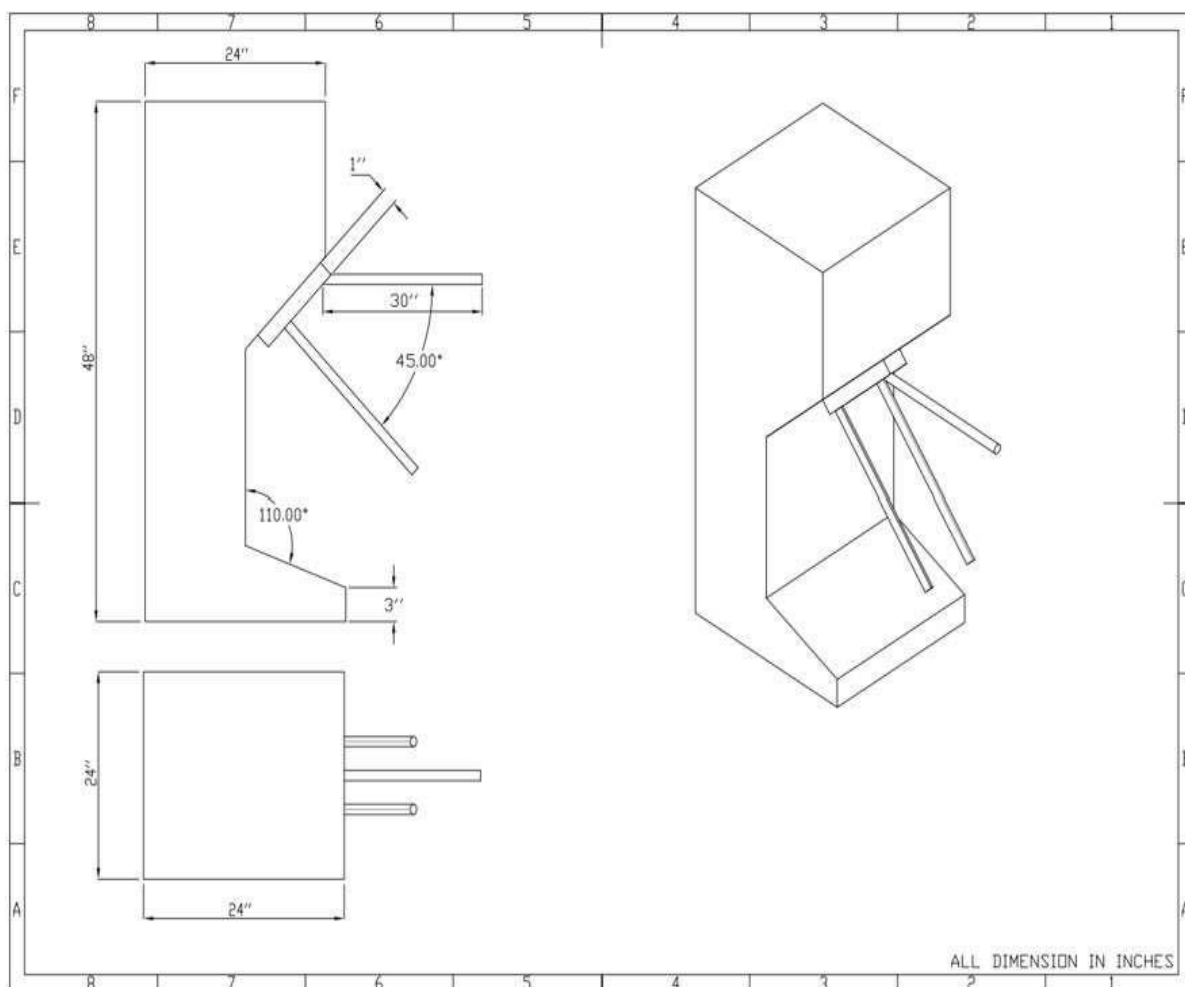
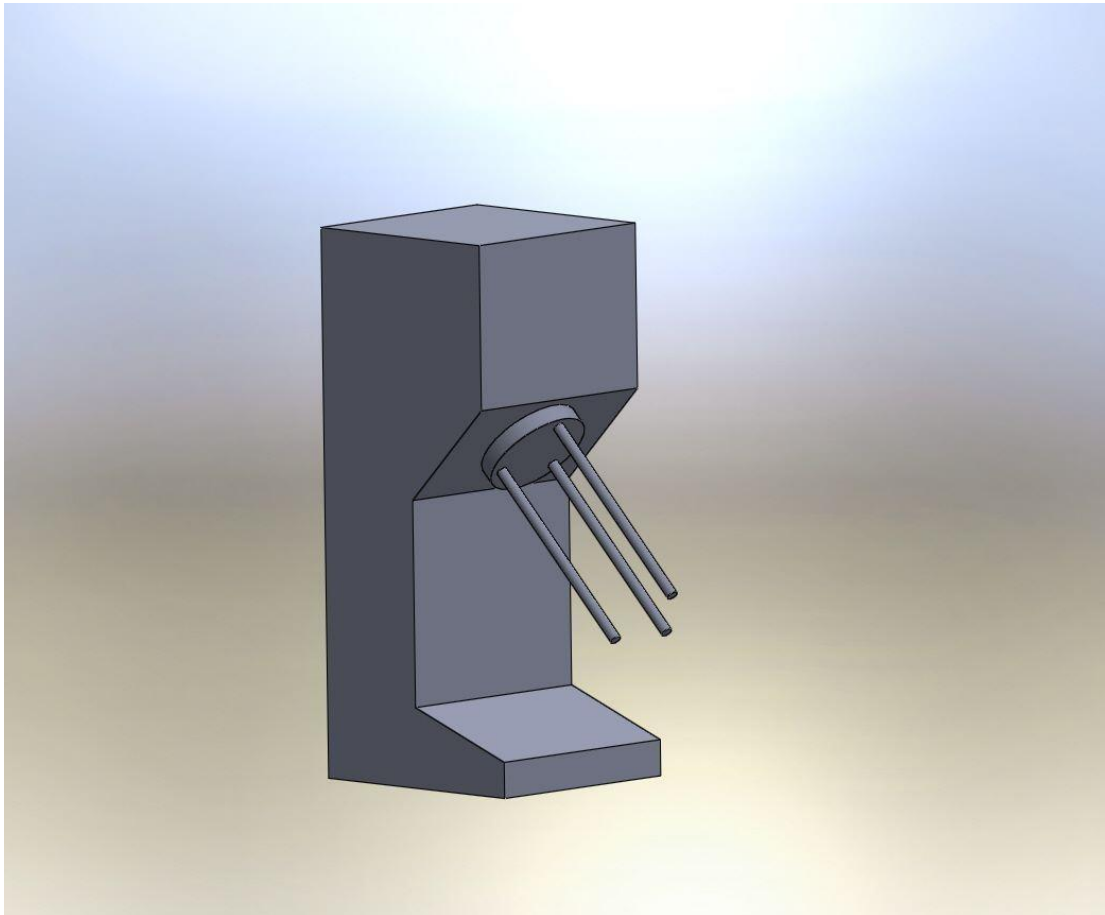


Fig. Machine Setup

3D Model:**Fig 3D Model****CONCLUSION**

Nowadays people are addicted to Pan Masala and Gutkha as well as Alcohol. And they do not control their addiction in public places like (bus stops, theatres, malls, airports, etc.) and cause dirt everywhere. This paper is related to eliminating people's habits in public places by using Automatic Barricades and Gas Sensors. so we can design a barricade that can sensor sense the human breath and give an output signal to the system.

This system helps to keep public places clean and creates awareness about the diseases from pan masala and gutka, especially helps hospitals to keep sanitized and clean. In addition, these systems have several advantages it as low cost, construction and operation being very simple, by using a microcontroller all operations are getting automatic. The result is shown by the system using LED blink.

The first condition is if the person does not consume smokeless tobacco then the green LED is blink and opens the barricades and the second condition is if the person consumes smokeless tobacco then the red LED blink and the barricade opposes to enter or restricts the entry of this person.

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