ISSN 2395-1621

AUTOMATIC AIR FRESHENER USING SENSOR

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ABSTRACT

Air freshener is an important aspect to most of the executive places. Now-a-days the air fresheners used are mainly based on sublimation process or timer delay systems. The room freshener sachets and gel are kept in open to emit pleasant fragrance and the timer-based systems do the same work periodically with the help of a mechanism installed in it.
But they can be wasteful in a way because they unnecessarily sprinkle scent in the room, also they have to be operated manually. This paper showcases the idea for implementation of smart air fresheners by using sensors,which will detect the presence of person and accordingly it will deliver fragrance in the surrounding through controller. In future upgradation, it will also notify when the scent container gets empty and will remind that refill is required.

ARTICLE INFO

Article History

Received: 8th March 2020

Received in revised form :

8th March 2020

Accepted: 10th March 2020

Published online :

11th March 2020

I. INTRODUCTION

With the ever-increasing population of people in every part of the world and also the presence of huge masses in various public places such as malls, hotels, restaurants, hospitals and in executive places etc. It has become impossible for common people to stay in these places for a longer period of time. The atmosphere of such places is not always pleasant because of various reasons. One such reason is the odor coming from different places and, even different types of people emit different odors into the atmosphere, along with pollution and many other substances in the air, making it impossible to provide a pleasing and affable surrounding for people.

Air freshener is a household product where it releases the chemical contains into the air and thereby are inhaled by the consumers which deliberately freshens up the mood of the person and refreshes the surrounding. An air freshener is a simple device that emits fresh and fragrant scent into the atmosphere from time to time. By sending out fragrance, the air freshener is able to cover up various types of appalling and disgusting smells, and thereby alleviates the uncomfortable feeling caused by the undesirable odor.[1]

The first current air freshener was introduced in 1948. Its function was based on a military technologyfor dispensing insecticides and modified into a pressurized spray using 1% perfume,24% alcohol,75% chlorofluorocarbon (CFC)propellant. In 1980's the air freshener market shifted from aerosols because of the destruction of the ozone layer happening and was harmful for small children too. Green lifestyle and design are an important trend in all markets as more and more people become aware of environmental concerns. Some designers are taking a fresh approach towards creating sustainable products by using ordinary materials in unusual ways.

The main contributions in this research work are as follows:

- Sensors are used for the detection.
- Embedded based controller is used.

II. LITERATURE SURVEY

Now-a-days people are keen to keep their house hygienic and with beautiful fragrance all over. With all the knowledge of fragrance and the air fresheners,people now-a-days start to make their own homemade air fresheners with all homespun ingredients used in it. Many different forms of freshener's are available in the market like the air freshener sprays, the solid, liquid, candles,oil, beads, plug-in, gel and timer based.

- Gel\sachet:

This gel air freshener is a unique product sachet which spreads the fragrance all around.In this, the gel is placed

inside the small packet,where the packet is hanged on the wall or just kept aside.

Fig.[1.1]

Fig.1.2

- Timer based:

In this modern technique,the fragrance is delivered after some particular delay.In this system we have controllable scent settings, where we can adjust the fragrant settings. As in if you want a small whiff of scent in kitchen you can change or need a strong smell of the perfume you can change the settings of the system.

Fig.1.3

- Spray air freshener:

This is the most efficient way of using the air fresheners.Theseproducts are gushed into the air and create a fine haze of fragrance.

Fig.1.4

III. PROPOSED SYSTEM

To overcome these various methods a system is proposed based on the sensors. A sensor is nothing but a device which detects some changes in the environment and gives the output accordingly. Sensors like passive infrared sensor (PIR), IR sensor, proximity sensor can be really helpful for the detection of any motion occurring in its area of impact. Each sensor mentioned earlier has different working principle and features. Based on these parameters the selection of sensor is done.

PIR Sensor-

The passive infrared sensor works by measuring the infrared light radiations emitted by objects in its area of impact. This sensor proves to be an excellent device for the detection of human beings. The range of PIR sensor is selective between 5 meters to 12 meters.Essentially, pyroelectric sensors that sense the levels of infrared radiation are used to compose PIR sensors.

Fig.2.1

IMPLEMENTATION:

- The presence of a person is detected by the PIR sensor which is installed at the entrance of the room.
- Controller woks as a communicator between sensor and dispenser system.
- According to the output of the controller the system will deliver the scent for a specific time period.
- A delay is given to the system after each sprinkle of scent liquid by the time the system will be in sleep mode

Block Diagram:

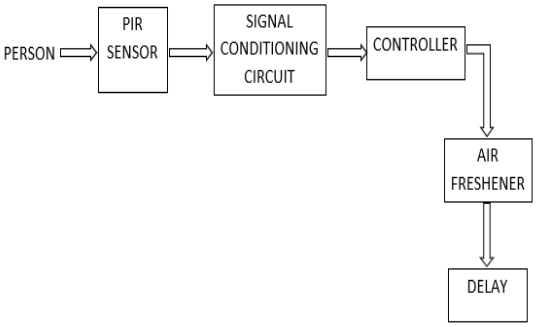

Fig.2.2

METHODOLOGY:

The PIR sensor which is used for the purpose detection of person is fixed at the entrance of room. Once the motion is detected by PIR sensor the output is given to signal conditioning circuit where the output signal processed in order to make the signal such that it meets the requirements of next stage. Then this signal is given to the fragrance dispenser system through controller. The dispenser system will then spritz the room with beautiful aroma to keep the surrounding fresh and eliminate the unpleasant odour. The system will then be in sleep mode for a selected time period after each spray and as the delay time is over the system will be again on to detect the presence of person. This will rest the system from unwantedair freshening efforts.

IV. DISCUSSIONS

The system discussed in this paper is an attempt to overcome the currently used methods in an effective and efficient way. One of the main advantages of this system is that it will save the liquid scent as the dispenser system will deliver the fragrance only when the presence of a person is detected. In future scope of this system a level detecting sensor and GSM module can be installed in it. The level detecting sensor will detect the level of the scent liquid or gas present in the dispenser system and it will notify the user through GSM module when the refill is required.

V. CONCLUSION

In this paper, the implementation done by using sensor and embedded systems will result in a better performance of air freshener by automatically gushing the liquid scent as motion is detected and hence it will ensure that there will be no unnecessary usage of the liquid scent.

REFERENCES

[1] https://www.lookchem.com/Chempedia/He alth-and-Chemical/14401.html

[2][Fig.1.1]https://en.m.wikipedia.org/wiki/Air_freshener

[3][Fig.1.2]https://images.app.goo.gl/ZhsCxcBfmTL4Hdpo6

[4][Fig.1.3]https://craftronixlab.files.wordpress.com/2017/12/caseopen.jpg?w=230&h=307

[5][Fig1.4]https://officio.in/product/ambi-pur-rose-blossom-air-freshener-275g/

[6][Fig2.1]https://www.elektor.com/hc-sr501-pir-motion-sensor-module

