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✉ [ijareeie@gmail.com](mailto:ijareeie@gmail.com)

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# Review on Laser Security Alarm Project

Mangesh Patil<sup>1</sup>, Rohit Autade<sup>2</sup>, Kunal Shinde<sup>3</sup>, Ayush Shedge<sup>4</sup>, Bhavsar.M.M<sup>5</sup>

Student, Dept. of Electrical Engineering, MGM's Polytechnic Aurangabad, India\*<sup>1,2,3,4</sup>

Professor, Dept. of Electrical Engineering, MGM's Polytechnic Aurangabad, India\*<sup>5</sup>

**ABSTRACT:** This project deals with a model of laser security alarm system design. Laser security systems used to be difficult to install and rarely available to anyone other than the super-rich. Now, there are dozens of different security systems on the market that utilize lasers and can effectively protect everything from small apartments and businesses to large areas of property. Most home laser security systems consist of two parts: a basic alarm unit and an infrared motion detector. Laser based security system is a type of security and alarm system that uses laser light and a light sensor. Why a laser to be used? It is known that a laser light goes through long distance without any scattering effect (disturbing) and it is only visible at source and the destination point so it can be used as mediator between source and destination but to analyse the source a sensor is need, here the use of LDR is applicable. Just analysis is not enough alerting should be done in general alerting is sound effect so here buzzer act as alerting. Its working: There is a laser diode that generates the laser beam which continuously strikes over the Light dependent resistor sensors. When any person crosses the path, it inhibits laser to reach LDR and the sensor generate a low which is read by controller to power on the buzzer.

**KEYWORDS:** Light Dependent Resistor, LASER. Small Buzzer, Push Button, 9V Battery, Connecting Wires, Breadboard.

## I. INTRODUCTION

Laser light travels in a straight line. For instance, to protect the front of the yard, putting the laser at one corner and the detector at the other corner would do the job. That's not a very practical configuration, though. More typically, if it is needed to protect the perimeter of a room, or at least the enhances. So laser security systems start with a laser pointing to a small mirror. The first mirror is angled to direct the beam to a second small mirror, and so on until the final mirror directs the beam to the detector. If the beam is interrupted anywhere between the laser and the detector, the electronics will put the warning signal.

It opens more opportunities for crime and draws people into committing crime leading to an unprecedented growth in the crime rate. There are many types of security system that are currently used by most people like CCTV but these security systems are visible to naked eyes that will alert the intruder, to avoid this we are proposing a project on Laser based security system.

## II. LITERATURE SURVEY

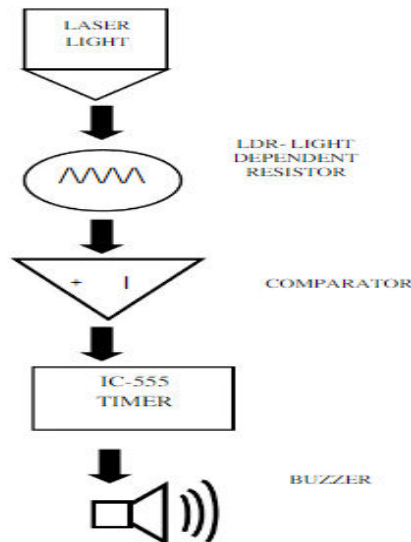
The intruder has entered the monitored entrance through beep sound. The earliest security system comes. They were very expensive at that time and hard to monitor an intrusion. Now the technology has developed very much more than the old

days. In this project based on the voltage drop across the LDR is considered to turn On and Off the transistor.

Security and comfort is an aspect that man seeks in living. Ensurance of safety for family, possessions and wellbeing is significant. There is an inseparable relationship between man and their belongings as foretold by Alvin Toffler in his prediction of the future in his book "FUTURE SHOCK". Man gives importance to the welfare of his family and protection from possible instances of accidents and crime. With this matter, man has created and innovated further security and safety.



## 2.1 BLOCK DIAGRAM



## III. METHODOLOGY

First, the OpAmp circuit acts as a comparator i.e. it compares the voltages at the inverting and non-inverting terminals and produces an output accordingly. The LDR, resistor voltage divider is connected to the non-inverting terminal of Op. If the laser light is blocked by an intruder from falling on the LDR (even for a small duration), the resistance of the LDR goes to few hundreds of Ohms and as a result, the output of the OpAmp will be HIGH. This will turn on the Transistor. As the output of the transistor is connected to the Trigger Pin (Pin 2) of the 555 Timer IC, if the transistor is ON, the trigger pin gets a short low pulse and as a result, . Since, the 555 Timer IC is configured as a Stable Multivibrator, a small active low trigger pulse at the trigger pin will set its output to HIGH and in order to reset it a person need to push the reset button. Until the reset push button is pushed, the alarm will stay on hence; place the reset button at a secret location so that only the owner can disable the alarm.

## IV. SECURITY DEVICE

Light Dependent resistor If conduction phenomenon occurs due to photons is known as photo conductivity. And it occurs when sufficient number of electrons shifts into LDR is also that type of photoresistor A photoresistor is an electronic component whose resistance varies as a function of light. If the light falling on the device is high frequency photons are absorbed by the semiconductor elasticity giving the electrons enough energy to jump the conduction band.

## V. APPLICATIONS, ADVANTAGES

### ➤ APPLICATION

- Apart from security systems, this laser based setup can also be used to check if pets or babies crossed a certain boundary.
- Electrical alarms
- Signal processing
- Audio Control: Sliding potentiometers, one of the most common uses for modern low-power potentiometers are as audio control devices. Both sliding pots (faders) and rotary potentiometers (knobs) are regularly used to



frequency attenuation, adjust loudness and for different characteristics of audio signals.

➤ **Advantages**

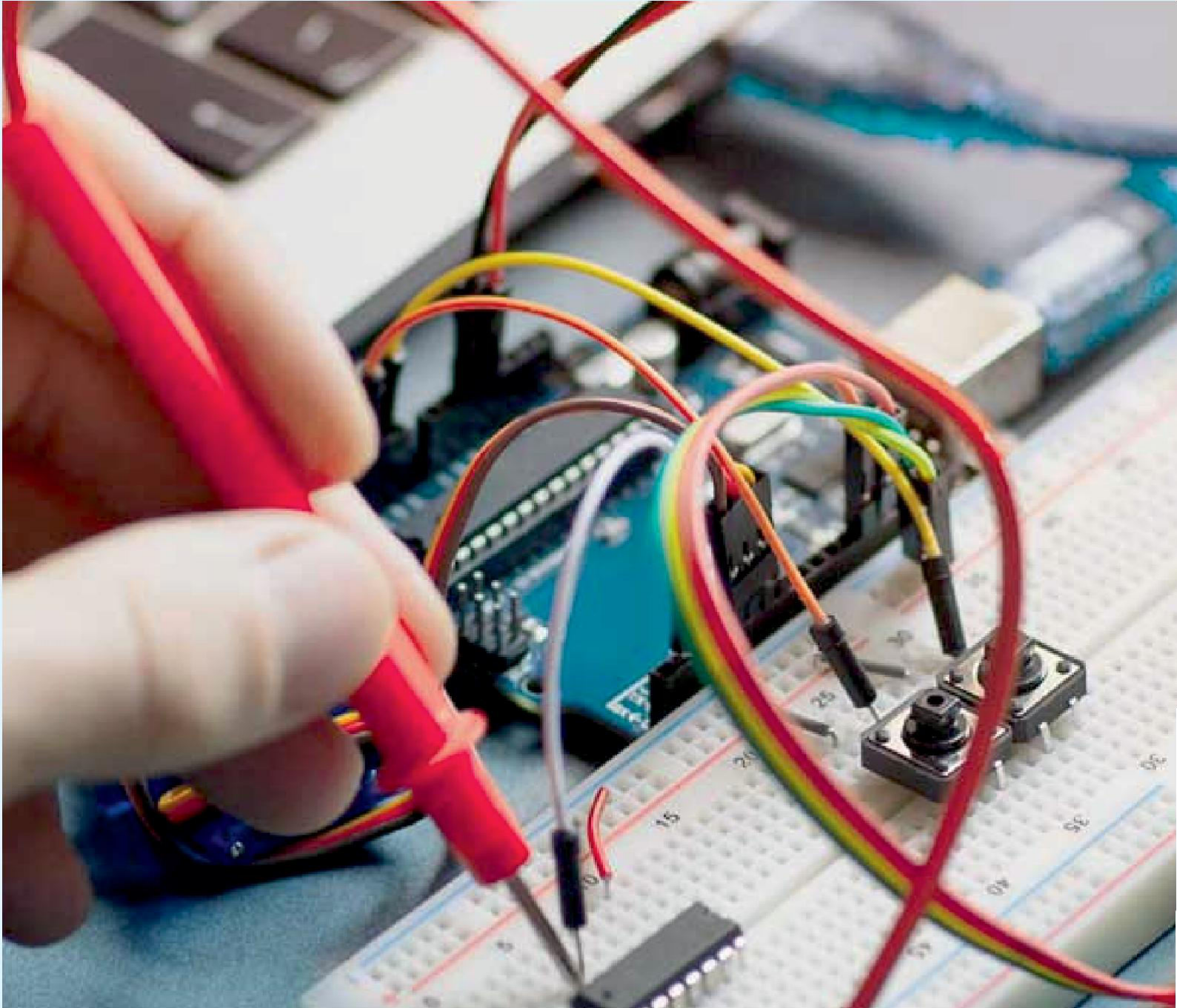
□ Laser alarm systems have plenty of added advantages: • With its latest technology features, crime is deterred. Also, it imparts fear in their mind.

## VII.CONCLUSION

This system hopefully will be the helping hand for society. The Laser & LDR system is highly sensitive with a great range of working. This highly reactive approach has low computational requirement, therefore it is well suited to surveillance, industrial application and smart environment sn the end, we made the laser security in low budget. It had been protect in full security. And the alarm signals the security monitoring company and local law enforcement.

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