**Smart Fire Detection Using OpenCV and Python With Arduino - GSM - Call Alert and SMS Notification**

**ABSTRACT:**

Internet of things is an interconnection of physical devices embedded with electronics, software, sensor which is capable of collecting data from the surrounding and sending data over internet is called IOT. The fire detection gathers all of the techniques and processes that contribute to early detection of a fire. We identify three main categories: Smoke detection, Flame detection and Temperature detection. Automatic fire alarm system provides real-time surveillance, monitoring and automatic alarm. An automatic fire alarm system based on wireless sensor networks is developed, which is designed for high-rise buildings. To provide early extinguishing of a fire disaster, large numbers of detectors which periodically measure smoke concentration or temperature are deployed in buildings. In this paper will we present the different techniques we had been already used to detect fire. Some of those techniques include fire detection using image processing and sensors, fire detection using CCTV technology, Fire detection using GSM and GPS with sms and call alert then motor pump is on

Key Words – ARDUINO microcontroller, Fire alarm system, Wireless sensor networks, Sensor etc AND GPRS MODEM.

**PURPOSE:**

The purpose of the project is to provide fire security for in home r any where . In case of any fire alert the gprs modem will ping the data from tower and send the loaction to mobile numbers. Open cv with python camera to detect the fire and send to Arduino.

**Block Diagram:**

**spinkler**

**Arduino MICRO CONTROLLER**

**POWER  
 SUPPLY**

**LCD**

**Python code detect fire**

**GSM MODEM**

**SIM800l**

**BUZZER**

**Led’s**

**Red/green**

**GSM:**

GSM (Global System for Mobile communications) is the technology that underpins most of the world's mobile phone networks. The GSM platform is a hugely successful wireless technology and an unprecedented story of global achievement and cooperation. GSM has become the world's fastest growing communications technology of all time and the leading global mobile standard, spanning 218 countries. GSM is an open, digital cellular technology used for transmitting mobile voice and data services. GSM operates in the 900MHz and 1.8GHz bands GSM supports data transfer speeds of up to 9.6 kbps, allowing the transmission of basic data services such as SMS.

**SOFTWARES:**

* Embedded C
* ARDUINO IDE
* Uc-Flash
* Express PCB

**HARDWARES:**

* Micro Controller
* Power Supply
* Gsm module
* Laptop
* Usb cable
* LCD
* Led’s
* SPINKLER

**RESULT: fire alert**

According to this project, we can provide safety system for home and also protect in where in emergency conditions