

Smoke Detector on Mobile Phone

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ABSTRACT

Day by day the number of vehicles are increasing very drastically along with the population increase, as well as the needs and wants of people increase. Everyone wants to have their own vehicle to travel. This kind of unavoidable want is leading to chaos in the atmosphere by entering the danger zone of pollution. So there should be such a device that should alert each and every individual of the danger. The best solution is smoke detector on mobile phone. This is the only device ruling the world by binding each and every individual.

KEY WORDS: Smoke Detector, Atmosphere.

1. INTRODUCTION

Almost all small fires start as smoke in their initial stage and can be controlled by turning it off when detected at the early stage using proper firefighting equipment. Apart from avoiding fire accidents, detecting smoke can be very useful for the speedy crowded road traffics. Everyone in this world desires to have their own motor bikes, car of different models for individual purpose. Nowadays we see many people driving towards their office in their luxury cars all alone, this not only increase the traffic but also increases the time to reach as well as releases the unwanted gas in the form of smoke.



Figure.1. Mobile Phone Smoke detector

At the point when the contamination level expand their may be danger to human life as it slaughters by harming and aspiratory aggravations happened via carbon monoxide, hydrogen cyanide and numerous different burnings with the blend of warm harm. A smoke cloud does not impede a picture, but rather altogether scrambles it. Smoke from oxygen have a predominant compounds of flammable thus inhaling that causes death. Many compounds are toxic like carbon monoxide, phosgene, when smoke that are destructive to lungs and materials. By burning the cables the toxics are observed by the clothing piped water supply, wood, unsealed surfaces which cannot be seen through naked eye.

One day of exposure to PM_{2.5} at a concentration of 880 $\mu\text{g}/\text{m}^3$, such as occurs in Beijing, China,



Figure.2. Sheremetyevo airport(Moscow, Russia) 7 August 2010

As per analysis on this subject by the Surgeon General's, Short exposures to used [tobacco] smoke can bring about blood platelets to wind up stickier, harm the coating of veins, diminishing coronary stream speed saves, and lessen heart variability, conceivably expanding the danger of a heart attack. The American Cancer Society records "coronary illness, lung diseases, expanded asthma assaults, center ear contaminations, and low conception weight" as consequences of smoker's emission. Presently the smoke detectors are deliberately used in big factories, Shopping centers, Recreation hall these are considered as wall mounted or portable. Thus when suspected these electronic device convey or alarm the alert. Smog is becoming a major problem for living life healthy. As per the statistics Beijing, in China and Delhi in India are under severe Alert of the high level of smog. Center for Science and Environment (CSE) reviewed winter air quality data Particulate matter less than 2.5 is dangerous if it crosses permissible limits of 10 and 8, Statistics are shown as in table 1 and 2.

Table.1. CSE Statistics as per Beijing

Delhi's air quality		
As per Beijing air quality classification and health alert system		
Air quality grade	PM2.5***	No. of days*
Excellent	35	1
Good	35-75	4
Slightly polluted	75-115	10
Moderately polluted	115-150	10
Heavily polluted	150-250	45
Severely polluted	250-500	51
	>500	2

Table.2. CSE Statistics as per US

Delhi's air quality		
As per US air quality classification and health alert system		
Air quality grade	PM2.5***	No. of days*
Good	12	0
Moderate	Up to 35.4	1
Unhealthy (SG)**	55.4	2
Unhealthy	150.4	22
Very unhealthy	250.4	45
Hazardous	350.4	36
Highly hazardous	500.4	15
	>500	2

Types of Smoke Alarms and Detectors: Two of types of fire detectors are Heat and smoke detectors.

Optical smoke alarms: effectively detects the smoke particles produced.

Fire Alarm Types:

Heat Detectors: Detects the fire if it reaches fixed threshold temperature. Heat detectors are used for

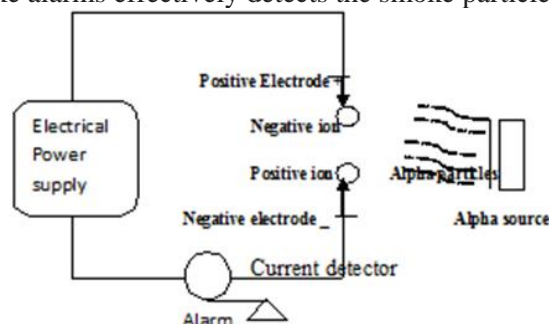
- Where the rapid detection is not a issues and where smoke detectors cannot be used.
- Fire detection at congested places where high heat fires are encountered.

Heat detectors are slow at detecting and alarming the alert. And research proves that smoke detects faster than heat detectors.

Smoke Alarms: Three types of Smoke alarm available in are: photoelectric, ionization, and photoelectric combination.

As in Fig.3, An ionization smoke alarm uses a small amount of radioactive substances generally Americium. When radiations enter into the ionization chamber that is filled with air, between two electrodes and that allows a small, constant current between them. Alpha particles are absorbed from smoke that goes into the chamber, thereby reduces the ionization and disturbs the current flow, which is made to ring the alarm.

Photoelectric smoke cautions comprises of a photon source, a photon pillar collimating framework and a photoelectric sensor. Optical smoke alarms effectively detects the smoke particles produced.

**Figure.3. Ionization Smoke Detector**

If smoke goes into the optical chamber, which crosses the light path beam, in this way light dissipates in view of smoke particles, hitting at the sensor and hence rings up the alert. This kind of indicator is best utilized for moderate seething flames.

Ionization/photoelectric Combination: consolidates both the components of ionization and photoelectric advancements. Ionization smoke alerts recognizes high vitality fires quickly and the later locators low vitality seething flames. For strong safety both are recommended at home.

Innovative idea: As the communication network is making people busy by twitter, facebook, whats app etc. many a people have mobile phone in their hands. So the best solution for this problem is to provide the smoke detector on mobile phone. Thus it need to make a person conscious about the pollution alert. The General block diagram for smoke detector is as depicted in fig.1. The mobile phone should have this type of simplified smoke detector, some electronic circuit for carrying the sensed data and to display the alert on the screen. Some of the big cell phone manufacturers like Apple and Nokia are working towards it for proper implementation.

2. CONCLUSION

As the threat for life because of smog, increasing of pollution level is drastically entering the danger zone in many capital cities of the world. The mobile phone smoke detector is the single person alert monitoring system. This may lead to self-conscious of each individual to control the production of smoke. This becomes one of the best contribution to the society by the reputed Cell Phone Manufacturers.

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