LITERATURE SURVEY

(Industry specific intelligent fire management system)

1.**Fire safety management information system design for key social organizations**

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ABSTACT:

Aiming at the actual fire safety management needs of key social organizations and units, this paper introduces the design and implementation of the fire safety management information systems of the networked key organizations and units, providing information sharing and services on fire-fighting facilities' operating conditions, fire alarm information, and fire management information to the networked users, fire maintenance enterprises, and the fire supervision and administrative authorities so as to improve the fire safety management efficiency for these organizations and units, offer a scientific tool to the organizations to improve their fire safety management level, extend the functions of fire remote monitoring control system, and promote fire prevention and control capability of the whole community.

**2. Discussion of society firefighting safety management internet of things technology system**

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**Abstarct:**

IOT is regarded as another information industry wave following computer, Internet and mobile communication network, and has become one of strategic dominant positions of new economic and technological development all over the world. The society fire-fighting safety management is an important application field of Internet of Things (IOT) technology. This paper combines application features of IOT technology according to fire-fighting business requirement to discuss the fire-fighting IOT systematic frame, plan society fire-fighting safety management IOT technology system, and propose priority development points of society fire-fighting safety management IOT technology, thereby providing reference for technology research and development of IOT technology in society fire-fighting safety management field.

**3.**[**Fire Safety management   in Transportation of Municipal Wastes with the Use of Geographic Information systems**](https://ieeexplore.ieee.org/document/8554130/)

**Author:** [O.P. Savoshinsky](https://ieeexplore.ieee.org/author/37086533285);[A.A. Zakharova](https://ieeexplore.ieee.org/author/37619540200);[A.V. Pak](https://ieeexplore.ieee.org/author/37086530787)

**Abstarct:**

## Fire safety management is one of the main tasks in the field of waste safety. The transportation of municipal waste is a complex management task that requires a highly skilled decision maker. The current management technique is based on the approach to the construction of systems based on the analysis, by assessing the set of initial factors, which does not allow to achieve the management goal. The proposed approach based on synthesis is devoid of this drawback. The application of the system is shown by the example of the use of geoinformation systems to the problem of fire safety in the transportation of municipal waste.

## **4.** [**Application of PHM Technology in the Design of Tank  fire  Control  system**](https://ieeexplore.ieee.org/document/8603357/)

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ABSTRACT:

Combining with the process of Prognostics Health Management (PHM), the technology and application of armored vehicle fire control system PHM were discussed. The architecture of the health management system for tank fire control system was researched. According to the information characteristics of tank fire control system, the dual redundant bus transmission technology of FLEXRAY and CAN was applied, and the corresponding software and hardware systems were designed. Through the vehicle test, it is proved that the health management system will be effective for locating the fault, comparing the aim and assisting the soldier training. The data and video collected by this system are convenient for both maintenance and further study as the basic data.

## **5.**[**Automatic fire  alarm and fire control linkage system  in intelligent buildings**](https://ieeexplore.ieee.org/document/5654923/)

AUTHOR : [Wang Suli](https://ieeexplore.ieee.org/author/37087627333);[Liu Ganlai](https://ieeexplore.ieee.org/author/37087624709)

ABSTRACT:

This paper describes a comprehensive program of an office building intelligent systems Fire Control Linkage System subsystem design, At the same time, it describes the following: the idea of the system designing, the system components, selecting equipment, the linkage of alarming and controlling gas extinguishing, and the technical features. Projects under this program have been completed, can realize the intelligent prediction of fire, automatic fire alarm and linkage functions. 

## **6.**[**Agent based data collecting in a forest fire  monitoring system**](https://ieeexplore.ieee.org/document/4129926/)

AUTHOR :[Ljiljana Bodrozic](https://ieeexplore.ieee.org/author/37550781200);[Darko Stipanicev](https://ieeexplore.ieee.org/author/37550780900);[Maja Stula](https://ieeexplore.ieee.org/author/37550781900)

ABSTRACT :

In forest fire protection systems 24 hour surveillance is of most importance. Real time data must be acquired to react fast enough to suppress fire occurrence or to minimize damage made by forest fires. In forest fire monitoring systems, usually a large area must be controlled. Real time data has to be collected and processed in time. When the amount of data reaches critical volume, modern software techniques have to be implemented in order to accomplish system goals. In this work we have implemented agent technology on data retrieval and processing. A multi-agent system for real-time data collection and processing is described. This work is a part of a more complex integral project of forest fire protection in Split-Dalmatia County. The integral forest fire protection system will be based on the information system for integration of all activities connected with early fire detection by 24 hours video and meteorological monitoring, management of forest-fire fighting and post-fire recuperation of burned landscape.

## **7.**[**Prototype of fire  symptom detection system**](https://ieeexplore.ieee.org/document/8350730/)

AUTHOR : [Oxsy Giandi](https://ieeexplore.ieee.org/author/37086374636);[Riyanarto Sarno](https://ieeexplore.ieee.org/author/38096337700)

ABSTRACT :

One of smart home function is fire alert detection. The symptom detection of fire in the house is important action to prevent the mass fire and save many things. This research applies the new system of fire detection using gas leak concentration to predict the explosion and fire earlier called fire predictor and the fire appearance detector. The fire predictor just show the gas leak concentration and make an alarm rang. The fire detector use fuzzy system to make the fire detector classification. The output simulation system can send the data to MFC, but the MFC reader cannot parse it in real time.

## **8.**[**Research on public building fire risk assessment control model**](https://ieeexplore.ieee.org/document/7531615/)

AUTHOR : [Wei Yayun](https://ieeexplore.ieee.org/author/37085857607);[Wang Jia](https://ieeexplore.ieee.org/author/37085860017)

ABSTRACT:

Large space, multi-function, crowded public buildings are increasing. In case of fire, it will cause enormous casualties and property losses, so the fire control management plays an important role in the fine management of city. And the building fire risk assessment is an effective means of fire management. This article is aimed at analyzing the particularity of fire risk factors of public buildings in operational stage, and establishing the index system of fire risk assessment. This paper illustrates the fire scenario and the personnel evacuation simulation using the model of university teaching building through FDS and Pathfinder, studies about the impact on the level of building fire risk as the fire factors changing. This paper establishes the fire risk assessment model based on SVM theory, and gets a better precision in case of the small sample size, providing a new method and scientific basis for the fire risk assessment of the public buildings.

## **9.**[**Wireless fire  detection monitoring system for fire and rescue application**](https://ieeexplore.ieee.org/document/7225623/)

AUTHOR :[Muhammad Salihin Ahmad Azmil](https://ieeexplore.ieee.org/author/37085741336" \t "_self);[Norsuzila Ya'acob](https://ieeexplore.ieee.org/author/37847645900);

ABSTRACT:

The purpose of the Fire and Rescue Service is to protect human life, our property, and Earth natural resources from fire and other emergencies. With fluctuation in demands, the Fire and Rescue Service must equip with the best techniques, training regime and equipment to meet public expectations. Mitigation, preparedness and risk management have taken on new benefit with challenges facing the fire service today. Fast response cannot be achieved without good planning and preparedness. As a result, a monitoring system of alarm for fire detection using Arduino microcontroller was design. The circuit are includes with a buzzer, smoke sensor and a camera. All the data taken from smoke sensor and camera will be send to data monitoring system and be display on monitoring system wirelessly.

## **10.** [**An embedded system  of dedicated and real-time fire detector and locator technology as an interactive response mechanism in fire occurrences**](https://ieeexplore.ieee.org/document/7942622/)

AUTHOR :[Sheila Abaya](https://ieeexplore.ieee.org/author/37078433200);[Ejay Cabico](https://ieeexplore.ieee.org/author/37086177742);[Jonah Domingo](https://ieeexplore.ieee.org/author/37086174700);[Rommel Diaz](https://ieeexplore.ieee.org/author/37086178088);[Hiro Kojima](https://ieeexplore.ieee.org/author/37086174911);[Ronel Rivera](https://ieeexplore.ieee.org/author/37086176558)

ABSTRACT:

Fire alarm system is considered as one of the most essential mechanisms for safety against fire. In fact, most structural buildings especially the commercial ones are required by law to be equipped with this technology. The Bureau of Fire Protection (BFP) in the Philippines have recorded a total of 12,301 fire incidents in the year 2013, in the year 2014 there were 15,897 and in January 2015 a total of 1,848 incidents have transpired. Out of these incidents, 244 lives were lost in 2013 and 263 in 2014. Aside from the lives that were taken, these destructive killer fires also caused a lot of homeless individuals that have brought property damage to 5.5B in 2013, 3.3M in 2014 and 411M since January 2015. In spite of the figures, the BFP is still implementing measures that foster safety and fire prevention in whatever structural setup you are living or staying in. This information has motivated the development of an embedded technology of detecting and locating fire occurrence for possible deployment in the BFP agencies or fire stations in the country to provide immediate response and actions in mitigating fire incidents. The proposed system structure is an integration of sensors, microcontrollers and wireless sending of data. Homes, offices, schools or any building structure equipped with this technology will be an implementing measure in reducing the occurrence of destructive and killer fires