



(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

Patent Search

Invention Title	AUTONOMOUS FIRE DETECTION ROBOT SYSTEM FOR INDUSTRIAL ENVIRONMENTS
Publication Number	36/2023
Publication Date	08/09/2023
Publication Type	INA
Application Number	202341058046
Application Filing Date	30/08/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	G05D0001020000, G08B0017120000, G08B0017100000, G08B0017000000, B25J0009160000

Inventor			
Name	Address	Country	Nationality
Thottempudi Pardhu	Department of ECE,BVRIT HYDERABAD College of Engineering for Women, Bachupally, 8-5/4, Nizampet Rd, Hyderabad, Telangana 500090	India	India

Applicant			
Name	Address	Country	Nationality
Thottempudi Pardhu	Department of ECE,BVRIT HYDERABAD College of Engineering for Women, Bachupally, 8-5/4, Nizampet Rd, Hyderabad, Telangana 500090	India	India
BVRIT HYDERABAD College of Engineering For Women	Plot No-8-5/4, Rajiv Gandhi Nagar Colony, Nizampet Bachupally,Hyderabad, 500090, Telangana, India	India	India

Abstract:

The present invention is an autonomous fire detection robot designed for use in industrial environments. The robot is equipped with various sensors, including thermal sensors, smoke detectors, and optionally gas detectors, for accurate and early detection of fires. It features a robust navigation system that allows autonomous navigation through complex industrial spaces and an obstacle detection and avoidance system for safe operation. The robot also includes a communication system for alerting personnel or a central control centre upon detecting a fire. Optional firefighting equipment enables immediate response to fires. The robot operates on a rechargeable power source and incorporates a control system for managing its functions. Machine learning algorithms are included to enable the robot to learn from its environment and improve its performance over time. This fire detection robot represents a significant advancement in industrial fire safety, offering rapid and accurate detection and response to fires.

Complete Specification

Description:Field of Invention: The present invention generally relates to fire safety equipment and, more specifically, to an autonomous robot for detecting fires in industrial environments.

Background of the Invention: The background of the invention sets the stage for why the invention is necessary and how it improves upon existing technology. For a fire detection robot for industrial applications, a possible background of the invention could be as follows:

Fires can pose significant risks in industrial environments due to flammable materials and substances. Traditional fire detection systems, such as smoke detectors and thermal sensors, are often deployed throughout these environments to monitor for signs of fire. These systems, while effective, can have limitations. For example, they are typically stationary and may need to detect fires quickly or accurately enough, especially in large or complex industrial spaces.

Furthermore, in many cases, when a fire is detected, and human firefighters are deployed, the fire may have already caused significant damage. Traditional systems are also limited in detecting fires in hard-to-reach areas, such as inside equipment or areas with restricted access.

Robotics has been identified as a promising solution to these challenges, with the potential to improve the speed and accuracy of fire detection and respond more rapidly to fires. However, designing a robot that can navigate industrial environments, detect fires accurately, and withstand the harsh conditions present in a fire is a significant challenge.

The current invention is aimed at addressing these challenges by providing an autonomous fire detection robot that is specifically designed for industrial applications. The robot is equipped with advanced sensors for fire detection, systems for autonomous navigation, and potentially firefighting equipment, offering a more effective solution for fire safety in industrial environments.

[View Application Status](#)



