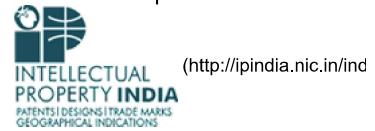




(<http://ipindia.nic.in/index.htm>)



Patent Search

Invention Title	Real-Time GPS-Based Forest Fire Detection and Alert System
Publication Number	01/2026
Publication Date	02/01/2026
Publication Type	INA
Application Number	202541126298
Application Filing Date	13/12/2025
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	G08B 17/10, G08B 17/12, G08B 17/00, G08B 25/10, H04W 4/029

Inventor

Name	Address	Country	Nat
Ch. Venkateswara Rao	Assistant Professor, Dept. of ECE, Vishnu Institute of Technology, Vishnupur, Bhimavaram, West Godavari District, Andhra Pradesh 534202	India	Indi
Y. Srinivas	Assistant Professor, Dept. of ECE, Vishnu Institute of Technology, Vishnupur, Bhimavaram, West Godavari District, Andhra Pradesh 534202	India	Indi

Applicant

Name	Address	Country	Nation
Vishnu Institute of Technology	Sri Vishnu Education Society, Kovvada Rd, Vishnupur, Kovvada, Andhra Pradesh 534202	India	India

Abstract:

The invention discloses an advanced forest fire alert system capable of early fire detection and real-time geographic location tracking. The system integrates flame and smoke sensors with a microcontroller-based processing unit to continuously monitor forest environments for fire-indicative conditions. Upon detection and verification of a fire or smoke event, a GPS module generates precise latitude and longitude coordinates corresponding to the incident location. A wireless communication module transmits alert messages containing event status and location data to remote monitoring platforms, mobile applications, or emergency authorities. Local alert mechanisms and optional controlled suppression units provide immediate on-site response. The system supports low-power operation and scalable deployment across large forest areas, enabling rapid response, reduced false alarms, and improved forest fire management compared to conventional monitoring methods.

Complete Specification

Description:FIELD OF THE INVENTION

[001] The present invention relates generally to the field of environmental monitoring, disaster-management systems, and emergency alert technologies, and more particularly to an Internet-of-Things (IoT) and embedded-microcontroller based forest fire detection and alert system. The invention specifically pertains to systems that integrate fire and smoke sensing, real-time Global Positioning System (GPS) location tracking, wireless communication, and automated local actuation mechanisms to enable early detection, precise geo-localization, and rapid notification of forest fire incidents. The invention further lies at the intersection of wireless sensor networks, real-time geospatial tracking, cloud-connected alert platforms, and autonomous mitigation control, enabling location-accurate alerts and optional on-site response initiation for forest fire management and environmental protection.

BACKGROUND OF THE INVENTION

[002] Forest fires constitute one of the most destructive natural disasters, causing extensive loss of forest cover, wildlife habitats, ecological balance, and human life and property. Early detection and precise localization of forest fire incidents are critical to minimizing damage and enabling timely intervention by forest authorities and disaster response agencies. Conventional forest fire monitoring methods primarily rely on manual patrols, watchtowers, satellite imagery, or delayed public reporting, all of which suffer from significant limitations in response time, accuracy, and reliability.

[View Application Status](#)



Terms & conditions (<https://ipindia.gov.in/Home/Termsconditions>) Privacy Policy (<https://ipindia.gov.in/Home/Privacypolicy>)
Copyright (<https://ipindia.gov.in/Home/copyright>) Hyperlinking Policy (<https://ipindia.gov.in/Home/hyperlinkingpolicy>)
Accessibility (<https://ipindia.gov.in/Home/accessibility>) Contact Us (<https://ipindia.gov.in/Home/contactus>) Help (<https://ipindia.gov.in/Home/help>)
Content Owned, updated and maintained by Intellectual Property India, All Rights Reserved.

Page last updated on: 26/06/2019