

Real-Time Mine Safety System with the Internet of Things

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Abstract : This study introduces an IoT-based real-time safety system for mining, addressing global safety challenges. The wearable device, seamlessly integrated into miners' jackets, employs LoRa technology for communication and offers real-time monitoring of vital health and environmental data. Unique features include an LCD panel for immediate information display and sound-based location tracking for emergency response. The methodology involves sensor integration, data transmission, and ethical testing. Validation confirms the system's effectiveness in diverse mining scenarios. The study calls for ongoing research to adapt the system to different mining contexts, emphasizing its potential to significantly enhance safety standards in the industry.

Keywords : mining safety, internet of things, wearable technology, LoRa, RFID tracking, real-time safety system, safety alerts, safety measures

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