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IoT Based Industry Protection System

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Abstract: *The IOT industry protection system using NodeMCU controller is a system designed to protect industries from losses due to accidents using Internet of things. Gas leakages may lead to fires leading to huge industrial losses, also instant fire detection is needed in case of furnace blasts or other conditions. Also low lighting in industries may create improper work conditions increasing the probability of accidents. The system makes use of NodeMCU Controller to achieve this functionality. The system makes use of temperature sensing along with light and gas sensing to detect fire, gas leakage as well as low lighting to avoid any industrial accidents and prevent losses. The system consists of light, gas and temperature sensors interfaced with NodeMCU controller and LCD screen. The sensor data is constantly scanned to record values and check for fire, gas leakage or low light and then this data is transmitted online. The Wifi module is used to achieve internet functionality. The IOT server then displays this information online, to achieve the desired output. Keywords : NodeMcu, Temperature Sensor, Flame Sensor, Smoke Sensor, IoT, Relay*

Problem: Traditional industrial safety systems are often reactive and lack real-time remote monitoring, leading to delayed responses during gas leaks, fires, or machine overheating.

Solution: This paper proposes an IoT-based framework that integrates various sensors with a microcontroller to monitor environmental and machine health parameters.

Method: Data is collected via sensors, processed locally, and transmitted to a cloud platform for real-time visualization and automated alerts.

Result: The system ensures a 24/7 surveillance mechanism, reducing human intervention and minimizing industrial downtime.

Keywords: *NodeMCU controller*

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