ABSTRACT

This research aims to design and implement an air quality monitoring system in Laban wood processing production based on the Internet of Things in Karangjambe Village. Poor air quality in the wood processing industry can cause serious health impacts for workers, such as respiratory problems and lung disease. Therefore, monitoring tools are needed that can provide real-time information regarding air quality levels. This system uses the MQ-135 sensor to detect smoke and carbon dioxide (CO2) concentrations, the MQ-2 sensor which focuses on detecting propane and carbon monoxide (CO) gas, and the SHARP GP2Y1010AU0F sensor to detect dust concentrations measuring PM2.5 and PM10. as well as an ESP32 microcontroller to process data and send data to the Internet Of Things platform. The results of this research will show that the tool built and developed is capable of monitoring air quality effectively, as well as providing notifications to users when pollutants increase. By implementing this technology, it is hoped that it will be able to increase awareness of the importance of air quality and create a safer and healthier work environment. This air quality monitoring system also contributes to the development of an Internet of Things-based system that can be applied in various other industrial sectors.

Keywords: *Air Quality, Internet Of Things, MQ-135 Sensor, MQ-2 Sensor, Sharp GP2Y1010AU0F Sensor, ESP32 Microcontroller, Health.*