

## ABSTRACT

Based on Decree of the Minister of health of the Republic of Indonesia Number 1405 / MENKES / SK / XI / 2002, in the industrial work environment there is a requires limit on temperature, humidity, and carbon monoxide. The threshold value for the temperature is 18 °C - 30 °C, humidity is 65 % - 95 %, and carbon monoxide is 100 ppm. When it is exceeding the specified threshold value, then there will be some symptoms in humans such as respiratory disorders. Based on the problems above, it needs a system in the form of hardware and software which is able to detect temperature, humidity, and carbon monoxide, and also needs a system which is relatively cheap and easy to operate. Unfortunately, this system is not available on the market. Thus, this research aims to make an air quality monitoring system. Air quality monitoring system is a system which is able to detect temperature, humidity, and carbon monoxide. This system is assembled using several components such as Raspberry Pi 3B, MQ-7 sensor, DHT11 sensor, mockup, jumper wire, and breadboard. The component is run by using some software such as Python IDLE and Blynk. To make the system, there are several steps that are carried out. First choose the best framework, where the framework is selected based on price and ability to detect air parameters. After selecting the framework, the next step is assembling. In this step, components that have been purchased are assembled using wiring system. And the last step is testing. Raspberry as the processing module will be connected to the internet for sending the data to Blynk as the server that will be accessed by smartphone which have been integrated with the system. Testing is done by monitoring the air quality on the mockup as a prototype of the production line. It is known that the system can work well. The system detected the temperatures in mockup at 27 °C - 30 °C. The system also detected the humidity at 58 % - 80 %. And the system detected the carbon monoxide at 9 ppm – 11 ppm. Then the test results are analyzed and states that the condition of the mockup room is in the healthy category.

Keyword: Temperature, Humidity, Carbon Monoxide, Air Quality Monitoring System.