

## ABSTRACT

*Nowadays, cigarette smoke and flame hazard anticipation in public area is still problem that has not been resolved. It can be seen from there are many visitors who smoke in public area that has sign of non-smoking area. In addition, the visitors who are uncomfortable felt reluctant and afraid to ask them. Another problem is the security issues of fire hazard that may occur. The problem is still make the visitors afraid because there is no flame detection and the quick handling of local officials.*

*In connection to solve problems above, a device that can detect cigarette smoke and flame by using sensors SHT-11 and MQ-7 will be designed and realized in this final project. The device that will be designed not only to detect, but also to give warning in the form of alarm signal when smoke or flame is detected. The alarm signal of cigarette smoke is different with the flame. If cigarette smoke is detected, this alarm will sound the human voice to admonish persons who have smoke and if the flame is detected, the alarm will sound a siren. In addition, it will also activate the circulatory and air freshener. The system will also send a message to the officer via sms gateway to curb the visitors who were smoking or perform rescue actions during a flame.*

*Thus, this tool has been able to detect smoke with minimum voltage value is 1.59 volt or it is 30ppm for first sensor, while for the second sensor is 1.52 of voltage value, it is equivalent to 29ppm. In addition, the accuracy of the sensor SHT-11 is 99.8% when compared with a thermometer. Thus this tool has been able to detect cigarette smoke and flame.*

*Keywords: Cigarette smoke, flame, SHT-11, MQ-7, microcontroller, sms gateway*