

## **ABSTRACT**

Disaster fires more intense in recent years. Fires can occur in residential areas, especially in densely populated areas in the big cities due to the lack of warning systems and early treatment. Fire is more difficult to shut down if it has been enlarged and spread as a result of goods flammable in it.

In this final project has designed a detection and treatment system using the AVR ATmega16 minimum system which has two sensors are temperature sensors and smoke sensors and associated with alarm, water pump and a GSM modem. The sensor receives input form temperature and air density and process it in the system. When the system detects a fire, then the system will sound an alarm, turn on the water pump to fight the fire and sending an SMS to the homeowners through a GSM modem connected to the system using AT Command.

In the implementation, the system of early detection and treatment can be placed in the fire room, living room, kitchen or other places prone to fire. The system is working properly seen that has been able to measure the temperature and the LCD display to the difference 0,74°C with room thermometer. When the system detects a fire, the system will sound an alarm, spray water automatically and sending sms to homeowners with 100% rate of success.

Keyword: Microcontroller, ATmega16, Alarm, SMS, Water Spray