

## **Abstract**

Fire is a natural disaster that has adverse impacts for humans, one way to reduce losses greater is the danger of early detection of the start of a fire in a video. The problems that occurred in the fire detection system is the analysis to distinguish an object that is not a fire that has characteristics similar to the fire.

Currently there are many tools to detect fire one example is Heat detector or detecting heat rise this system works is based on the temperature rise the temperature quickly in a room, the system has the disadvantage that a fire is detected is a fire that has become a big, another example is the smoke detector system is working based on existing smoke in a room, the system has only a shortage if a fire causes smoke so little influenced by the burning material. For this reason a tool that is often used today is CCTV which have advantages in terms of accuracy, speed and low cost, the workings of the device based on the image captured so as to allow for early detection of a fire.

In this thesis the author builds a fire detection system using energy wavelet analysis method which has advantages in terms of objects to distinguish objects that have the same characteristics with fire, using these methods is expected the system is able to detect objects in a video fire.

**Keywords : Fire, Natural disasters, CCTV, Heat Detector, Smoke Detector, Wavelet analysis**