

## ABSTRACT

*Air is an important factor in our lives which need to be maintained and enhanced so that it can have a positive impact for mortal for quality living. Now the air pollution is increasingly revealed appalling conditions. One of the pollutants that cause a decrease in air quality that is dust. Under certain conditions the dust is a hazard that can cause harm, for example fatal lung function, or even can lead to public intoxication. So it takes a good air circulating system to minimize dust in residential neighborhood.*

*In this Last Project, the writer made a device that can reduce the amount of dust in the room based on microcontroller. Which the device will produce better air quality to support the needs of activities in the room .The device uses ATmega 8535 microcontroller that connect with other devices such as temperature sense (LM35) and PIR sense, and then it also has some output such as LCD and exhaust fan.*

*In brief, the device has the result which to reduce the amount of dust and to make the temperature cooler. The result of the dust that deposited in the aquarium measuring (10x10x12cm) by 20.000 ppm by volume comparison as big water mixture 1000cm<sup>3</sup>. The exhaust fan that used to suck the air has 220 volatge and 0.125 A. the device has been integrated by PIR sensor that has been given a shealth to detect the number of occupants in the room (maks 5 meter) so that it can save electrical energy when the fan moves according to the number of occupants in the room. This device can save electric power consumption for 1 hour more than 0.0103125 Watt. The temperature has a long range from -55 to +150°C.*

***Key words: dust, fan, filter of dust, temperature sensor, PIR sensor***