ABSTRACT

Health is a requirement that must be met by every man to be able to indulge in life. Many human efforts to maintain his fitness as a regular sport activities also conduct regular diet. However, these efforts are sometimes still not prevent people from disease, this is because the human living environment has now been contaminated with various pollutants including air pollution . So need to control the gas to be released into the air, it will make our environment is maintained.

By nature of pollutants in the air can be cleaned with natural phenomena such as lightning. Because lightning is a natural electrical high voltage, high voltage which is able to break down the particles gas. Technology can be developed in a variety of methods to produce high voltage. One way is to step-up the voltage in this case using the transformer. Input transformer added a dc-dc converter type boost converter form that will provide the input voltage varies. Control switching on the boost converter and transformer used PWM from microcontroller with high frequency. Systems work on this device using Fuzzy logic. Fuzzy will process the data received by the sensors. In designing this project only used carbon monoxide gas sensor.

Results of the study were able to produce high-voltage transformers with ranges of 5021,61 volts to 9210,91 volts. The 62% is maximum value of reduction of gas Carbon monoxide in same place for a minute. In other hand, systems that are drawn to the free space value range 9.68% of reduction (process flow ten seconds). In the test a whole system value of power savings is 23.33% (comparison between conventional method and fuzzy logic method).

Keywords : boost-converter , step-up transformer, switching, PWM, reduction