

## ABSTRACT

Air pollution caused by the presence of chemicals in the environment above the specified threshold. In the normal range of chemical substances in the air we breathe is still good, but if it exceeds a specified threshold air around us will become a deadly enemy. One of the many chemicals in the air are Nitrogen (N<sub>2</sub>) and oxygen (O<sub>2</sub>). Normal threshold of substance that will change with the growth of population, industry and transportation. Many of our daily activities that can lead to damage of this nature. Starting from the disposal of motor vehicles to large industrial. The following are various types of chemicals that can create air pollution: CO<sub>2</sub>, CO, NO and NO<sub>2</sub>, SO<sub>2</sub> and SO<sub>3</sub>, Pb, CFCs.

In this final project will be implemented devices to monitor or detect the content of some gases in vehicle emissions such as H<sub>2</sub> / HC, CO, NO<sub>2</sub> and CO<sub>2</sub> are harmful to human health and can contaminate the environment when the air exceeds the threshold. In this tool will use three sensor head that is TGS2106, TGS2104, and TGS4161. Of the three head sensor measurement data will be processed by an AVR microcontroller that functions as a slave ATmega placed near the exhaust fumes and the results sent to the serial connection to the AVR microcontroller ATmega that serves as a master to be displayed in an LCD. LCD will display the measurement results. And for a description and analysis of measurement results processed by the application on your PC using a USB connection. Source power of the all the devices of the battery or accu of the vehicle itself.

This device is expected to be applied in the community such as for monitoring emissions of private vehicles that do not have to check emissions in certain agencies and can be done right precautions. Because air pollution is not only the responsibility of government alone but all parties are expected to participate in it. It is expected that with this device every individual can check how much the emissions produced by their vehicles.