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Smart Air Quality Monitoring System Using Arduino Mega

Abstract

Traditionally, pollution measurements are performed using expensive equipment at fixed locations or dedicated mobile equipment laboratories. The automatic air quality monitoring system using Arduino can save cost and easy to access. The project that we have undertaken has helped us gain a better perspective on various aspects related to our course of study as well as practical knowledge of electronic equipment and communication. Moreover, the project of air quality monitoring system has achieved to monitor and prevent the effect of high temperature and dusty air to the child and human just like the objective of the project needed. The project can detect the temperature and dust density and besides that it will send alert to the user when detecting the air quality is unhealthy. Furthermore, a project is design and develop air quality monitoring system using Arduino Mega which is to enhance safety affect such that even the minor eye irritation can make the user to lose his concentration and lead to serious accidents. Where the dust sensor and temperature able to detect hazy day that triggers buzzer to alert user to decrease the outdoor activities. Air quality is monitor for whole day at Ulu Pauh Putra by using this device and the data is recorded and make into a graph. The average dust density is 78.22ug/m3 and the range of dust density levels are about 68.07ug/m3 to 84.87ug/m3. By comparing the result to API reading show that air quality is moderate pollution that does not pose any bad effect on health. The testing of project was done for whole day is to verify the accuracy of the data. Moreover, it can help to avoid errors occur in the project. Focusing on the device produced, it detects high temperature and sense the dusty air immediately. Once the sensitivity is high, the buzzer module will active to alert user.