Smart noise pollution detection Air Pollution Monitoring System

Abstract:-

Air pollution has significant influence on the concentration of constituents in the atmosphere leading to effects like global warming and acid rains. To avoid such adverse imbalances in the nature, an air pollution monitoring system is utmost important. This paper attempts to develop an effective solution for pollution monitoring using wireless sensor networks (WSN) on a real time basis namely real time wireless air pollution monitoring system.

Commercially available discrete gas sensors for sensing concentration of gases like CO and CO2 are calibrated using appropriate calibration technologies. These pre-calibrated gas sensors are then integrated with the wireless sensor motes for field deployment at the campus and the Coimbatore city using multi hop data aggregation algorithm.

A light weight middleware and a web interface to view the live pollution data in the form of numbers and charts from the test beds was developed and made available from anywhere on the internet.
Other parameters like temperature and humidity were also sensed along with gas concentrations to enable data analysis through data fusion techniques. Experimentation carried out using the developed wireless air pollution monitoring system under different physical conditions show that the system collects reliable source of real time fine-grain pollution data.

Block Diagram:-