

The Mechanisms Used to Measure the Indoor Air Quality in Classrooms

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Abstract:

Recently, concerns about the effect of air pollution on school kids have increased. There is a growing body of evidence about asthma's development, as well as the worsening of symptoms of people with asthma, and exposure to air pollutants associated with traffic. For this reason, air quality control in the internal environment is considered one of the important things to monitor pollution levels, assess the appropriateness of the child's environment in the classroom, ensure a safe environment, activate the activities of air filtration, stimulate environmental awareness among the decision makers, and develop technologies according to data. Due to the absence of a standard tool for the data of indoor air quality of classrooms in The Hashemite Kingdom of Jordan schools, this research provides: a proposed system to measure air quality. It consists of: distributed sensors connected to a developed system and constitutes a **wireless sensor network** (WSN).

Sensor nodes are based on low energy ZigBee movements, and transmit field measurement data to the cloud through a portal. An improved cloud computing system has been applied, monitored, processed and visualized to store the data received from the sensor network. Data-processing shall be implemented and analyzed in the cloud through the application of artificial intelligence techniques, to improve pollutants and compounds technology. The proposed system is: low cost, small-scale, and low energy consumption which can enhance the effectiveness of air quality measurements, therefore a large number of nodes can be published, as well as the provision of the relevant information in order to distribute the air quality in different areas.

Keywords:

Monitoring the quality of the surrounding air, wireless sensor network, air pollution, indoor pollutants,