

## **WIRELESS SENSOR NETWORK BASED AIR QUALITY MONITORING SYSTEM**

### **ABSTRACT**

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts. By contrast, a general-purpose computer, such as a personal computer (PC), is designed to be flexible and to meet a wide range of end-user needs. Embedded systems control many devices in common use today.

Modern embedded systems are often based on microcontrollers (i.e. CPUs with integrated memory and/or peripheral interfaces) but ordinary microprocessors (using external chips for memory and peripheral interface circuits) are also still common, especially in more complex systems. In either case, the processor(s) used may be types ranging from rather general purpose to very specialized in certain class of computations, or even custom designed for the application at hand. A common standard class of dedicated processors is the digital signal processor (DSP).

This paper proposes a simple Wireless Sensor Network (WSN)-based air quality monitoring system (WSN-AQMS) for industrial and urban areas. The proposed framework comprises a set of gas sensors (ozone, CO, and NO<sub>2</sub>) that are deployed on stacks and infrastructure of a Zigbee WSN and a central server to support both short-term real-time incident management and a long-term strategic planning.

This architecture would use open-hardware open-software gas sensing capable motes [6] made by Libelium. These motes use the ZigBee communication protocol and provide a real-time low cost monitoring system through the use of low cost, low data rate, and low power wireless communication technology. The proposed monitoring system can be transferred to or shared by other applications.

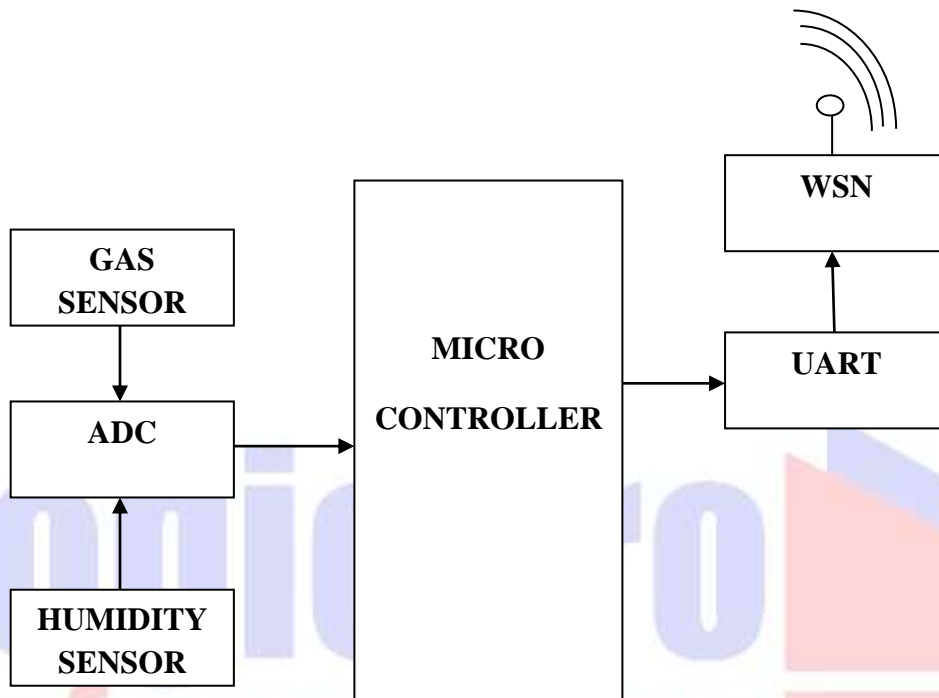
We also introduce a simple but efficient clustering protocol dubbed hereafter “Clustering Protocol for Air Sensor network” (CPAS) for the proposed WSN-AQMS framework. CPAS proves to be efficient in terms of network energy consumption, network lifetime, and the rate at which data is communicated.

## **PROPOSED SYSTEM**

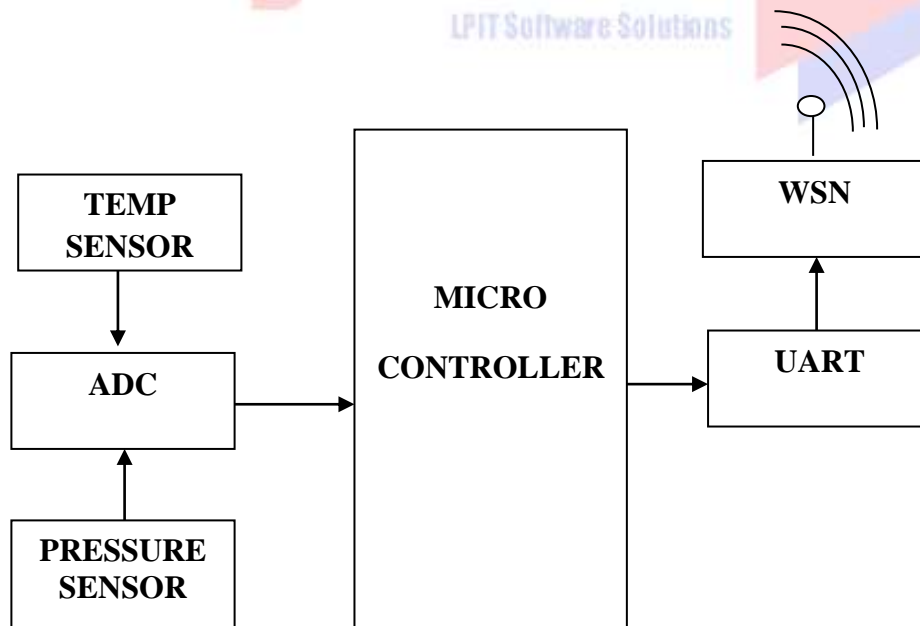
In this system, we proposed wireless sensor network to monitor the temperature , humidity, gas linkage and also the pressure values of industrial applications .By introducing this we can monitor the sensor parameter values in wireless communication and also we can upload the sensor parameter values in web portal

## BLOCK DIAGRAM

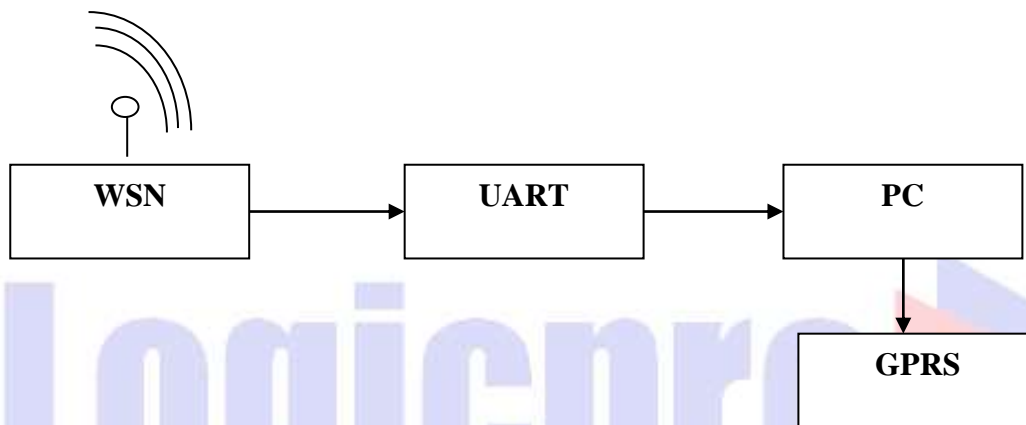
### NODE 1



### NODE 2



## MONITORING SECTION:



## HARDWARE REQUIREMENTS

- MICROCONTROLLER
- GAS SENSOR
- TEMP SENSOR
- HUMIDITY SENSOR
- GPRS
- PRESSURE SENSOR
- PC

## SOFTWARE REQUIREMENTS

- MCU COMPIERS
- PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino

