

## Wireless Sensor Networks for Water Quality Monitoring: Prototype Design

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**Abstract :** This paper is devoted to present the advances in the design of a prototype that is able to supervise the complex behavior of water quality parameters such as pH and temperature, via a real-time monitoring system. The current water quality tests that are performed in government water quality institutions in Mexico are carried out in problematic locations and they require taking manual samples. The water samples are then taken to the institution laboratory for examination. In order to automate this process, a water quality monitoring system based on wireless sensor networks is proposed. The system consists of a sensor node which contains one pH sensor, one temperature sensor, a microcontroller, and a ZigBee radio, and a base station composed by a ZigBee radio and a PC. The progress in this investigation shows the development of a water quality monitoring system. Due to recent events that affected water quality in Mexico, the main motivation of this study is to address water quality monitoring systems, so in the near future, a more robust, affordable, and reliable system can be deployed.

**Keywords :** pH measurement, water quality monitoring, wireless sensor networks, ZigBee

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