

# Wireless Sensor Networks for Green Cities: A Comprehensive Review of Environmental Pollution Monitoring

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**Abstract:** *This research paper investigates the design and implementation of a Wireless Sensor Network (WSN)-Based Data Acquisition System tailored for collecting environmental pollution factors with a specific focus on contributing to the realization of a Green City. Leveraging various literature surveys on WSN and its applications with different techniques, a comprehensive analysis of the existing body of knowledge in the field. The paper explores the deployment of WSN technology as a cost-effective and scalable solution for real-time monitoring of pollution-related parameters, including air and water quality, noise levels, and other relevant environmental factors. By synthesizing insights from diverse literature sources, propose an intelligent and adaptable WSN framework capable of capturing, analyzing, and transmitting real-time environmental data. The research highlights the importance of integrating advanced sensor technologies within the WSN infrastructure to ensure a holistic monitoring of pollution factors. This analysis also delves into various data acquisition methodologies and explores the potential for advanced data analytics and visualization techniques to derive meaningful insights.*

**Keywords:** WSN, IoT, Data Acquisition, Environmental Pollution, Green City.

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