Monitoring Management Platform for Plant Factory

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Abstract

In recent years, the phenomenon of global warming ishas become increasingly serious, and resultinged from human factors such as excessive development increases of human and, environmental pollution and, gas emissions and depletion of natural resources. According to researches, global warming leads to desertification, drought, reduction of rainfall and the crisis of a lack of fresh water crisis. Due to the continual growthcontinually growing of the global population, available resources is are being depleted and the pollution of water and food pollution is serious. Today, one of there is a new concepts about in agricultural development is called a "Plant Factory" which could mass produce mass plants economicallyeconomic value plant. Furthermore, the plant factory could overcome the effect of change of climate, environmental contamination and resource depletion. This study proposes a monitoring management platform for a plant factory. The platform adopts automatic management to replace the manpower by with the sensor technologyies to monitor and control the plants' environment. Moreover, it is based on a Wireless Sensor Network (WSN), Zigbee-based wireless transmission, and integrating components of sensor technology to establish automatic management platform. The proposed management platform reduces manpower costs, effectively achieves effectiveness of carbon reduction and is energy saving.

Keyword：wireless sensor network, Zigbee, management platform, plant factory