Applying Internet-of-Things Technology on Case Analysis and Research

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ABSTRACT

The research purpose of the thesis is aimed at applying IOT in the plant factory, and it is discussed about value-added that become emerging application. We also analyze the industrial advantages of the plant factories in Taiwan area. From the development of a complete set of monitoring system of plant growth environment where is suitable for the plant factory. We try to monitor the growth process of the plants and then make the measured values become as effective and useful data for following the plant to grow. It is known that the relationship between the plant's growth and the environment through data analysis is valuable. The complete deployment of the whole system is including a ZigBee wireless mesh, temperature meter, humidity meter and all other helpful facilities, which is developed in the school laboratory. We simulate the growth of the plants in different environments. Moreover, for promoting the overall system efficiency, the system is combined with the applying of cloud techniques for education learning purpose too. Through this platform it can not only get the latest environmental conditions but also learn knowledge across distinct domains. It could break through space-time limitation to explore erudition of the resource type based on the IOT, and carry out the related collaborative and inquiry learning of environmental education or plant cultivation. Finally, in view of the operation mode of the game "Happy Farm" on Facebook brousare, which is a platform, could let the user achieve for cultivating the plant on the remote. After virtual plants are mature, the agricultural cultivator will convey the ontic product of the plants which the user cultivates in virtual to home. In the way which is not only let the users get substantial experience pleasure, but also eat at ease. The system plays a maximum merit and benefit really.

Keywords : IOT　plant factory　ZigBee wireless mesh　remote monitoring and control system　cloud　Happy Farm

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