
设施农业环境无线监测系统的设计

摘要

伴随着全球农业科技的极大转型，设施农业已变为现代化农业的关键构成部分。感应器与网络通信紧密结合的多方位环保监测系统软件在农业种植中充分发挥着关键功效，尤其是根据无线通讯技术的环保监测互联网已经快速发展壮大。

如今大部分的无线网络环保监测互联网根据群集系统软件, GSM 短信通讯和 CDMA/GPRS 技术, 互联网建设成本增加, 维护保养艰难, 公共网络响应速度低欠佳, 因而, 这篇文章根据农业种植环保监测互联网和低成本, 功耗, 水灾地区, 高网站打开速度等难题, 根据 ZigBee 技术性的环保监测系统软件, 探讨配套设施在农区多点温、湿、光照强度, 关键研究:1) 制定简易的 ZigBee 互联网, 将数据监测与检测终端设备联接;2) 设计方案低成本, 便于创建检测传输数据路线;3) 设计方案了简易的感应器连接点, 用以收集和推送动物与植物生长发育的关键环境标准。实验操作测试表明, 这篇文章完成的原形系统软件具备下列作用: 即时精确收集环境信息, 即时将监管传输数据到个人监管终端设备, 完成实时数据监管。

关键词: 设施农业; 无线传感端; 环境监测

ABSTRACT

With the great transformation of global agricultural science and technology, facility agriculture has become a key component of modern agriculture. Multi-directional environmental monitoring system software, which is closely combined with sensors and network communication, plays a key role in agricultural planting. In particular, environmental monitoring based on wireless communication technology, the Internet has been developing rapidly.

Now most of the wireless Internet network environmental monitoring according to the cluster system software, GSM SMS communication and CDMA/GPRS technology, Internet construction cost, difficult maintenance, poor public network response speed is low, therefore, this article according to the agricultural environmental monitoring of the Internet and low cost, power consumption, flood area, high site open speed, environmental monitoring system based on the ZigBee technical software, discusses facilities in agriculture multi-point temperature, humidity, light intensity, the key research: 1) to develop simple ZigBee the Internet, the data monitoring and testing terminal connection; 2) Low cost design scheme, easy to create detection and transmission data route; 3) A simple sensor connection point is designed to collect and push key environmental standards for the growth and development of animals and plants. Experimental operation tests show that the prototype system software completed in this paper has the following functions: collecting environmental information accurately in real time, transferring supervisory data to personal supervisory terminal devices in real time, and completing real-time data supervision.

Keywords: Facility agriculture; Wireless Sensor Network; Environmental Monitoring

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