

家庭智能门窗控制系统的设计

摘 要

智能控制系统是 21 世纪发展速度最快、影响力最大的技术之一。目前智能控制系统已经涉猎范围广，小到人们的台灯、插座、门锁，大到人工智能、航空、火箭等等，都有智能控制系统的身影。人工智能设备系统它具有一些不需要人为去设定，只需要在初始化之后，进行设定一些数值即可，使整体方便快捷来完成某种任务，保证过程是按照预先设计进行，或者实现某个预先设计的结果。

甚至有一些集成电路和电子电路等相关专业，都会增强人工智能设备系统的发展，各种新型应用都将会出现。尤其是在集成电路、航天工程、人工智能、智能设备、智能家居等领域，智能控制系统技术担负起了关键作用。智能家居方面，智能控制系统有很好的发展前景。应用智能控制系统，将是家居环境更加智能化、人性化。

该智能门窗系统硬件电路主要由 C52 单片机、时钟模块、步进电机模块、显示模块、二极管模块等一些扩展电路构成。我们的家庭智能门窗控制系统的设计，主要从一下几个方面：系统的理论设计、电路设计与模拟、实物的实现等方向进行解决方案，成品的主要功能有通过光线的强度检测，根据检测的强度进行门窗开关、定时控制和手动控制等不同的控制方式。

关键词：智能设备；控制系统；硬件设计

Abstract

Intelligent control system is one of the fastest developing and most influential technologies in the 21st century. At present, intelligent control system has a wide range, ranging from people's lamp, socket, door lock, to artificial intelligence, aviation, rocket and so on. Artificial intelligence equipment system has some features that do not need to be set manually, only need to set some values after initialization, so that the whole is convenient and fast to complete a certain task, to ensure that the process is carried out according to the pre-designed, or to achieve a pre-designed result.

Even some integrated circuit, electronic circuit and other related disciplines will enhance the development of artificial intelligence equipment system, and various new applications will appear. Especially in the fields of integrated circuit, aerospace engineering, artificial intelligence, intelligent equipment, intelligent home and so on, intelligent control system technology plays a key role. In the aspect of smart home, intelligent control system has a good prospect. The application of intelligent control system will make the home environment more intelligent and humanized.

The hardware circuit of the intelligent door and window system is mainly composed of C52 single chip microcomputer, clock module, stepping motor module, display module, diode module and other expansion circuits. The design of our home intelligent door and window control system is mainly from the following aspects: theoretical design, circuit design and Simulation of the system, realization of the real object and other directions for solutions. The main functions of the finished product are through the intensity detection of light, according to the intensity of detection, door and window switches, timing control, manual control and other different control methods.

Key words: Smart devices;Control system;hardware design

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