课题名称 家庭智能照明系统设计

摘要

随着科技的发展，传统的照明方式使用起来不方便，已经不适应人们生活的需求，快节奏的生活，让人们对照明的要求越来越高，因此家庭智能照明系统应运而生。

本设计是一个可以在家庭的小客厅使用的家庭智能照明系统，使用STC89C52单片机作为系统的处理器，HX1838红外无线遥控器用来发送指令，并且进行远程控制，HC-SR501人体红外感应器用来感应人体是否在其感应范围活动，DS3231AT24C32时钟模块用来定时，OLED显示屏用来显示灯的状态，LED发光二极管来作为系统的发光装置。

此家庭照明系统，它可以使用红外无线遥控器远程控制灯的亮灭，调节灯光的亮度，还有感应人体的功能，当有人时灯就会亮，人走了之后灯就会灭，并且还有定时功能，其显示屏还可以让人看到当天的日期，还有灯的工作状态，它可以让人在家里有一个舒适、健康的生活照明环境。

关键词：STC89C52；人体感应器；红外无线遥控器；时钟；OLED

Abstract

With the development of science and technology, the traditional lighting method is inconvenient to use, and has not been able to meet the needs of people's life. Fast-paced life makes people's requirements for lighting higher and higher, so family intelligent lighting system emerges as the times require.

This design is a family intelligent lighting system which can be used in the small living room of the family. It uses STC89C52 as the processor of the system. HX1838 infrared wireless remote controller is used to send instructions and carry out remote control. HC-SR501 human infrared sensor is used to sense whether the human body is moving in its sensing range. DS3231 AT24C32 clock module is used for timing and OLED display screen is used for timing. The state of the display lamp, LED light-emitting diode as the system's light-emitting device.

This family lighting system, which can use infrared wireless remote control to control the lights on and off remotely, adjust the brightness of the lights, and the function of sensing the human body. When someone is there, the lights will turn on, and when people leave, the lights will go out. It also has a timing function. Its display screen can also let people see the date of the day, as well as the working state of the lights, It can make people have a comfortable and healthy lighting environment at home.

Key words: STC89C52; Human body sensor;Infrared Wireless Remote Controller; Clock; OLED