Design of intelligent solar street light control system based on single chip microcomputer

What is a street light control system?

Based on the concept of "energy conservation, emission reduction, green, and environmental protection", a set of street light control system is developed and designed, which utilizes software and hardware coordination control to achieve intelligent opening and closing of street lights.

What is a smart street light with AT89C52 microcontroller?

According to the concept of energy conservation and environmental protection,an intelligent street light with AT89C52 microcontroller as the core component is designed to effectively control the lighting of the street light. The sound

What is the control sequence of a street light?

The control sequence is: when the system detects that the ambient brightness is higher than the system threshold, the power module starts working, and the street light module does not work at this time; When the brightness at night falls below the threshold, the street light module operates and the power module stops working.

What are intelligent street lights?

Intelligent street lights make people's lives more convenient. They can be intelligently turned on or off based on the sound and light conditions on site,avoiding the situation of street lights not turning on due to rainy weather. This greatly saves electricity and achieves intelligent control of street lights.

How a street light system works?

If any object crosses the photoelectric beam,a particular light will be automatically ON. By using this as a basic principle,the intelligent system can be designed for the perfect usage of streetlights in any place. The block diagram of street light system as shown in Fig. 1 consists of microcontroller,LDR,and photoelectric sensor.

How does LED street light optical module work?

In the LED street light Optical module, AT89C52, as an important core component, receives the signal sent by the sensor, and outputs the modulated PWM signal through a series of operation links. The human body infrared thermoluminescence sensor is mainly used to receive ultrasonic signals within a certain range.

This project proposes the design of automatic cleaning function and automatic light source tracking system for solar street lamps. The external environment is detected by sensors, and the single chip microcomputer is used as the core control unit to drive the solar panel to automatically clean the surface and light-chasing actions to improve power generation efficiency.

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In this paper, the interest is to design a microcontroller-based system (controller) that automatically switches on a street lights at night and puts it off in the morning when darkness has disappeared. The system basically consists of a Light Dependent Resistor (LDR) as light sensor, power supply, relay and microcontroller.

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This paper proposes a new solar street lamp control system which is composed& #160;of photovoltaic cell, controller, battery and load. In this system controller as the key part applies the microchip to achieve many functions. According to the nonlinear output...

The solar street light intelligent control system is a humanized street light control device based on photovoltaic power generation. By monitoring the light intensity in real time, the analog information is converted into digital information for analysis and processing, so as to control the status of the street lamp in real time and so on. A ...

By analysis of the low degree of intelligence of the traditional lighting control methods, the paper uses the singlechip microcomputer for the control core, and uses a pyroelectric...

This paper designs a solar street lamp controller with combined time and light control to offer super brightness and haze penetration.The lighting time is controlled by single...

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Abstract-- This paper designs an intelligent street lamp control system based on narrowband internet of things (NB-IoT) technology to achieve intelligent control and management of urban street lamps. The system utilizes the latest NB-IoT technology, embedded technology, sensor technology, cloud computing technology, etc., to realize data acquisition, transmission ...

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According to the concept of energy conservation and environmental protection, an intelligent street lamp with AT89C52 single chip microcomputer as the core component is designed. Intelligent components (Photoresistor, etc.) are used to ...

This paper designs a solar street lamp controller with combined time and light control to offer super brightness and haze penetration. The lighting time is controlled by single chip ...

??: Due to the problem of short battery life and low system reliability because that the controller doesn"t protect the battery well on the current solar street lighting system,a solar street lighting Intelligent control system based on SCM is designed.Based on a variety of solar panels charging process,lit time of the high brightness LED street lamp and the power size,a new ...

A new adaptive solar street lighting control system base on SCM is designed using SOC control method that can avoid charge and discharge of the battery, extend battery life and improve the reliability of solarStreet lighting system.

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