



# SOLAR POWERED STREET LIGHT ILLUMINATION CONTROL BY PIR SENSOR

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**Abstract:** Wireless detector networks have decreasingly come contributors of veritably large quantum of data. The recent deployment of wireless detector networks in Smart City architectures has led to veritably large quantities of data being generated each day across a variety of disciplines, with operations including environmental monitoring, healthcare monitoring and transport monitoring. To take advantage of the adding quantities of data there's a need for new styles and ways for effective data operation and analysis to induce information that can help in managing the application of coffers intelligently and stoutly. This design depicts the state of art of employing road light robotization incorporated for megacity serviceability. The proposed armature is described and explained in terms of its functionality and some real- time environment apprehensive scripts.

**I. Introduction:** Purpose of this design is to make road lights intelligent so that it can turn it on and off itself. Another point of this design is that road lights intensity varies according to intensity of light and number of vehicles on road. we have taken force from solar panel It's actually a collection of solar (or photovoltaic) cells, which can be used to induce electricity through photovoltaic effect. These cells are arranged in a grid like pattern on the face of solar panels. It has voltage about 12Volts and 40 Watts. Solar cells are available in different volts and watts, with different sizes Smart system as its name suggest tools a smart instrument to make the road lighting more controllable and save the energy. similar system minimizes the operating hours of the thoroughfares light in the case of no purpose of lighting in which it off the thoroughfares lights after the night. The operation is designed in similar way that we place PIR detectors on the road lights circuit and which are responsible to switch on and off automatically. Photo diode are placed it'll absorb the sun light and it'll compare with comparator when both voltage zero also all LEDs are turned ON.

## II. Objective

The main objective of this paper is to provide a better solution to minimize the electrical wastage in operating street lights, in this electronic era human restless. Manual control is prone to errors and leads to energy wastages and manually dimming during mid night is impracticable. A rapid advancement in embedded systems had paved path for the virtual mechanisms. This paper presents an automatic street light controller using light dependent resistor (LDR) which is also known as photo resistor made cadmium sulfide. The light intensity is monitored using a PIR sensor.

## II.BLOCK DIAGRAM:

Battery is charged by solar panel; power supply will be provided to street lights by battery and illumination of the lamps are controlled by PIR sensor. By using this proposed method we can save the electricity

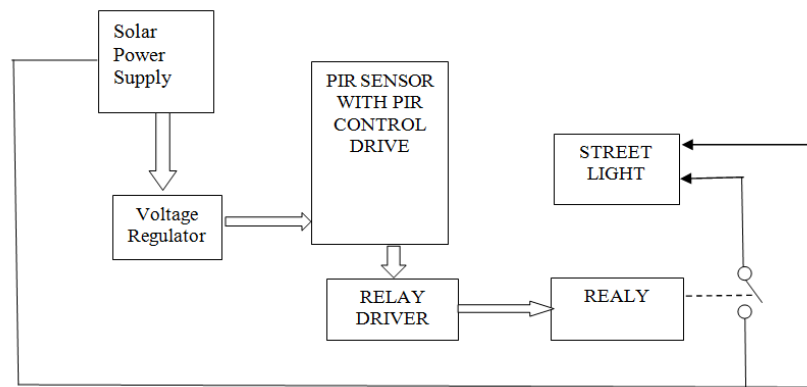


Figure1: Block Diagram

**IV. APPARATUS REQUIRED:**

SL.NO	APPARATUS	QUANTITY	TYPE	RATING
1	LED Street Light with PIR Sensor	02	LED	40W, 24V
2	Street Light Fitting Accessories (Pole & tools)	02	Steel	-
3	Street Pole	02	Steel	9-13ft
4	Connecting Cable	40mt	2 Core X 1.5 sq. mm LT Armored Cable	220 V, 1.5sq. mm
5	TPN Box	01		
6	Tools, Jigs & Fixtures etc	01		
7	Electrical Tool Box	2xxz401		

**V. SOLAR PANEL:**

- Solar panel are those devices which are used to absorb the sun's rays and convert them into electricity
- It is actually a collection of solar (or photovoltaic) cells, which can be used to generate electricity through photovoltaic effect. These cells are arranged in a grid like pattern on the surface of solar panels. It has voltage about 12Volts and 40 Watts. Solar cells are available in different volts and watts, with different sizes.

**VI. ADVANTAGE:**

- Automatic Lights
- Intelligent Control
- Minimal Operational Cost
- Super Long Lifespan
- Environment-Friendly
- Safe for Human Health
- Wireless and Safe

**VII. APPLICATIONS:**

- This system can be used as street lights
- This system can also be used in home automation
- This can be applied even in garden, parking

## VIII.CONCLUSION:

This design of Solar Street Light is a cost effective, eco-friendly and the safest way to save the energy. It easily tackles the two major problems that the world is facing moment, those are saving of energy and also disposal of incandescent lights. According to statistical data we can save further than 30- 40 of electrical energy that's now consumed by the roadways. Original cost and the maintained can be the debit of this design but, with the advances in technology and good resource planning the cost of the design can be cut down and also with the use of good outfit's the maintained can also be reduced in terms of periodic examination. The LED 'S consume lower energy with cool-white light emigration and has a better life than high energy consuming for these reasons this design presents far more advantages which can overcome from present limitations. Keep in mind that these long- term benefits; the starting cost would no way be a problem because the return time of investment is veritably less. Crimes which do due to homemade operation can be excluded fully. This design can be used in colorful operations like road lights, deck, home robotization, theatre and parking. In coming days, this will prove a great boon to the world, since it'll save a lot of electricity of power shops that gets wasted in luminating the road lights.

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