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(57) Abstract :
The present invention introduces a transformative IoT-based smart streetlight system (1) designed to achieve energy conservation and enhanced safety. By incorporating light-dependent resistor (LDR) sensors (1) and infrared object detection sensors (IR) (2), the system dynamically adjusts LED lights (3) brightness based on real-time environmental conditions. The integration of renewable solar power (5) and an ESP-WROOM-32 microcontroller (6) offers a sustainable and cost-effective approach to modern streetlight infrastructure. The invention's dynamic brightness control, renewable energy utilization, and automated features make it a promising solution for greener and safer urban lighting. (Figure to be accompanied with abstract : FIG. 1)

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