Contribution ID: **184** Type: **Poster**

Design, Development and Implementation of Smart Solar Streetlight Control System

Abstract
The increasing demand for sustainable and energy-efficient public lighting solutions motivates the adoption of solar-powered smart streetlights. This paper presents the design, development and implementation of an intelligent solar streetlight control system using the Arduino microcontroller. The system integrates solar energy harvesting, automated light intensity adjustment based on ambient conditions and motion detection for optimized power consumption. The proposed solution enhances energy efficiency, reduces operational costs, and provides adaptive street lighting suitable for smart city applications.
Key Words: Sustainable, Energy-efficient, Smart streetlights, Streetlight control system,

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Track Classification: Physical Sciences