KPR Institute of Engineering and Technology

R2021 UG Capstone Project

(AY 2024-2025)

Zeroth Review

Energy-Efficient Smart Street Lighting With Wireless Monitoring System

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INTRODUCTION

- The vehicle movement-based smart street light system improves energy efficiency and safety.
- It automatically adjusts street light brightness based on vehicle movement and ambient light.
- Features include wireless fault detection and reporting to the electric board (EB).

OBJECTIVE

- Automatically turn on lights when it's dark and adjust brightness based on vehicle movement.
- Detect street light faults using LDR sensors and transmit maintenance data wirelessly.
- Count passing vehicles using IR sensors and adjust lighting accordingly.
- Provide a panic button for full brightness activation during emergencies.

PROBLEM STATEMENT

- Traditional street lighting systems waste energy by operating continuously, even without traffic.
- Fault detection is manual, causing delays in repairs.
- No system exists for instant full-brightness activation in emergencies.
- A smart system is needed for energy efficiency, fault detection, and emergency control.

CONCLUSION

- The system improves energy efficiency and safety by adjusting lights based on real-time conditions.
- Fault detection and wireless reporting ensure timely maintenance.
- The panic button provides immediate full brightness in emergencies.
- This system offers a sustainable solution for modern street lighting needs.

Thank You...