

Semi-integrated Solar LED Street Light

Muhammad Nomaan Barudgar, Sairaj Dhangar, Nidhi Lad, Varad Marathe, **Ashwini Katkar**

Department of Electronics and Telecommunication Engineering, Vidyavardhini's College of Engineering and Technology (VCET), Vasai (West), Mumbai - 401 202, Maharashtra, India

ABSTRACT

Solar energy is one of the most significant and promising renewable sources of energy, and it has a lot of potential in street lighting systems. Solar street lights have become increasingly popular in recent years due to their many advantages over traditional street lights. An LED lamp is powered at night by a rechargeable battery that is charged by solar panels. As everyone knows, foreign nations have dominated our Indian market. It is past time for India to be self-sufficient in these items and to support the Government of India's Make in India effort. Furthermore, the items should not be harmful to the environment. Use of natural resources such as sunlight and wind are a must. So Semi-integrated solar LED street lighting is proposed. This Semi-Integrated Solar Street Lights have dusk to down sensors, has an adjustable brightness setting, is water resistant, has good energy storage and has a long battery life. The lamp technology uses solar energy to generate electrical energy from solar radiation during the day and then uses that energy to generate light at night. This makes it less expensive and easier to install. Because it is solar-powered, it may also be deployed in remote areas. This undertaking will be focused on maximizing usage and minimizing possible energy loss.

Keywords—Solar panel, LED street light.

I. INTRODUCTION

According to research, majority of the Indian market is dominated by Chinese items. It's time to wean our country off of Chinese imports and back the Make in India program of the Indian government. India has a wealth of natural resources, including solar and wind energy. Governments across the world are focusing on sustainable and renewable energy sources to reduce carbon emissions and combat climate change. This has led to an increased demand for solar-powered products, including semi-integrated solar street lights, which can help to reduce energy consumption and carbon footprint. Consequently, it is more economical to use natural resources as opposed to synthetic ones. A solar street lamp is a type of lighting system that makes use of solar cells to harvest electrical energy from solar radiation in the day time and use it to provide light at night. The recommended smart solar LED street light could be utilized for free if the solar panels have enough time to charge them.

The dependability of the system will increase by using the auto change over method, in which the utility supply is automatically switched from the street light. If not, enough charge has been applied to the battery storage. During the day, the battery starts to charge using a PV solar panel. At dusk, street lights are turned on automatically with a 30% intensity and battery depletion starts due to the light sensor. Every time a person or vehicle moves, the light intensity will increase for a predetermined period of time, from 30% to 100%. The

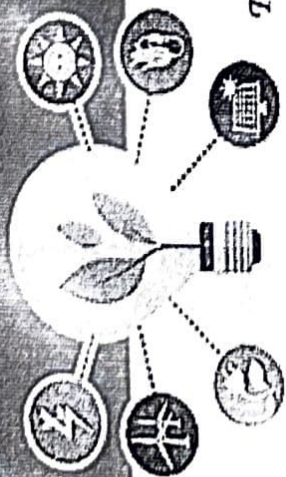


ANURADHA ENGINEERING COLLEGE



(Accredited by NAAC, Bangalore)
Anuradha Nagar, Sakegaon Road, Chikhli, Dist. Buldana (M.S.) 443 201
Organized by
Internal Quality Assurance Cell (IQAC)

4th NATIONAL CONFERENCE ON GREEN TECHNOLOGY & SCIENCE FOR SUSTAINABLE DEVELOPMENT (NCGTSD-2023)



◆ CERTIFICATE ◆

This is to certify Prof./Dr./Mr./Ms. Ashwini Katkar
has Participated / Presented a paper entitled Semi - integrated Solar
LED Street Light.



_____ at 4th National Conference on *Green Technology and Science*
for Sustainable Development (NCGTSD-2023) on 7th May 2023.

ASA
Dr. A.S. Kapse
Organizing Secretary

[Signature]
Dr. A.N. Nanhai
Principal

[Signature]
HEAD

Dept. of Electronics and
Telecommunication Engg.,
Vidyanarbhini's College of
Engineering & Technology
Vasai Road 401 203,