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A TECHNICALLY SKILLED YOUTH TO ASSEMBLE A "SOLAR URJA LAMP": WITH REFERENCE TO GANDHI GLOBAL SOLAR YATRA

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Abstract

A technically skilled youth to assemble "Solar Urja Lamp" at their own premises and which will reduce the consumption of electricity for the basic needs of human beings and helps to improve the environment conditions and save our earth from Global Warming.

Introduction

Today, a world is at the junction of a contradictory energy scenario wherein, at one end energy access has to be provided to billions while, on the other end, increasing demand and usage of energy is causing climate change. Mahatma Gandhi believed that "Nature can satisfy each one's need but not greed." Today, the natural resources have been over-exploited while the benefits reaped from these resources do not accumulate to everyone. There is a need to switch to 100% on renewable energy.

Today, renewable energy is technology-based solutions, specifically solar energy due to more advancement in technologies and reduction in cost combined with super-efficient loads enable economic viability of solar electricity generations. It meets to local energy needs through local generation alone for him.

We are fighting with Energy Access and Excess of Energy, wherein there are many human beings who face a lack of energy access while at the other end of the spectrum; excess of energy is leading to catastrophic climate change. To overcome this contradiction, the idea of "Solar Urja Lamp" is conceptualized wherein communities generate and produce their own energy needs. It is a state wherein the individuals and communities become sensitive to their own need of energy and become self-aware to administer the generation and consumption of energy within the own locality so that, it is supportable to live on the earth.

Problem Definition

Article Info:

Many people face a lack access to electricity while an estimated 2.8 million people lack access to clean cooking fuels. While atmospheric CO2 concentration has increased substantially due to the increased use of fossil fuels owing to energy demand pressures which has made the world already hotter by nearly 1°C. The 2018 Intergovernmental Panel on Climate Change (IPCC) report finds that "limiting global warming to 1.5°C would require "rapid and far-reaching" transitions in energy.

Objectives

1. To encourage use of clean energy among future users of technology by demonstration.
2. To motivate the education boards and universities to include hands on training of solar lamps as a part of their curriculum.

Methodology

A "Solar Urja Lamp" can be assembled with help of following

1. Introduction of physical components
2. Introduction to technical components
3. Working Principle
4. Assembling "Solar Urja Lamp"

1. Introduction of physical components

The assembly of "Solar Urja Lamp" contains following physical components

a. LED Cap
   LED cap is use to cover the LED light portion and save it from outside dust and particles.

b. Reflector
   Reflector is use to reflect the light of LED in a more efficient way to produce more output of LED light. It is a totally white color.

c. LED Face
   LED face is use to transfer the LED light to outside area of surveillance.

d. Switch Cap
   Switch cap is use to on and off the LED light.

e. Gooseneck
Gooseneck is soft metallic pipe is use to pass the LED light wire from one end to another end. It is very flexible to use and mold in any directions.

f. Base Top
"Solar Urja Lamp" is based on this Base top is use to cover the technical components of lamps.

g. Base Bottom
It is bottom line base of "Solar Urja Lamp" us use to place all the technical components at one place.

h. Screws
There are two types of screws, small screw-6.5 mm and big screw- 9.5 mm to pack all assemble of "Solar Urja Lamp".

2. Introduction to technical components

The assembly of "Solar Urja Lamp" contains following technical components

a. Solar Panel
Solar Panel is use to charge the battery of "Solar Urja Lamp". We have place this panel where sun light comes and at that time printed circuit board of the assemble take that light energy and convert it to renewable energy.

b. Battery
Battery is of 3.2 v is used to store the energy for long time

c. Load LED
It is a main LED light.

d. Load Wire
It is a simple wire use to carry current from circuit to LED light.

e. PCB
A printed circuit board is electronics components use to process all working of "Solar Urja Lamp".

3. Working Principle

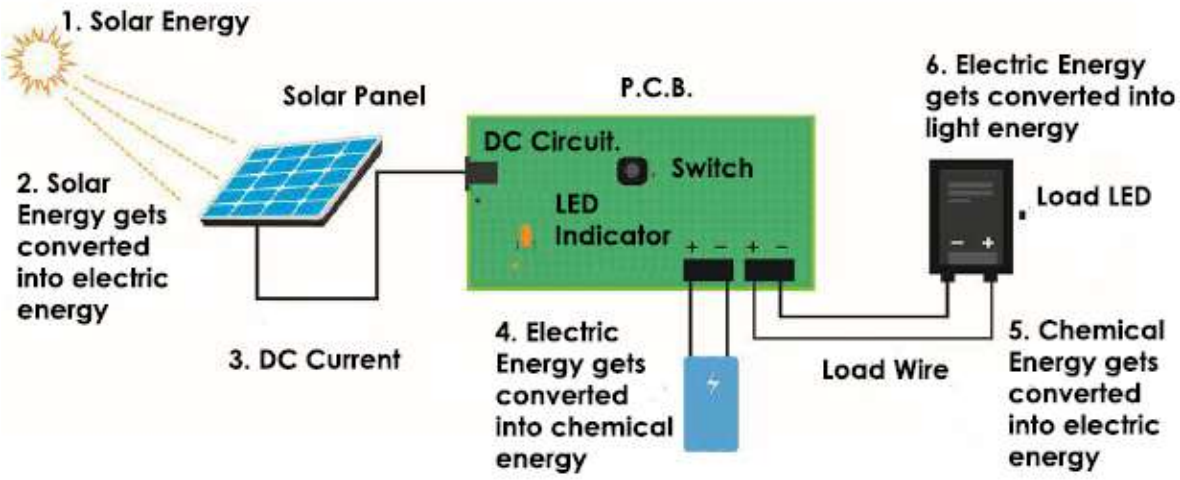

Fig:- "Solar Urja Lamp" Working

A "Solar Urga Lamp" work with the above working principle, first it take the solar energy from sun on solar panel and convert it electric energy in the form of DC current.

A printed circuit board (PCB) of the assembly has DC circuit pin where that energy is received and converted to the chemical energy and passed it to the battery connected to PCB circuit.

Once the battery is fully stored with the chemical energy, it pass to the load led of solar lamp in converted form of electrical energy to use the "Solar Urja Lamp".

4. Assembling "Solar Urja Lamp"

The following steps need to be followed while assembling the "Solar Urja Lamp"

- Gluing of one end (bottom) of Gooseneck.
- Insert the glued end of gooseneck in the Base cover top.
- Gluing of top end of Gooseneck
- Fix the LED top at top end of Gooseneck. (Make sure it's aligned properly
- Insert the load wire inside the gooseneck from the bottom end
- Load wire should come out from the other end (from the top end of Gooseneck, inside LED top.
- Soldering of load wire with LED strip.
- LED alignment
- Place LED reflector inside LED Cover.

- Place LED face and screw it along LED reflector and LED Cover.
- Mount PCB inside base bottom with alignment and screw it with base bottom.
- Place Battery in the given slot inside the base bottom.
- Connect load wire and battery to PCB.
- Now screw the base bottom and base cover with big screws.

Significance

"Solar Urja Lamps" or localized energy self-sufficiency is conceptualized wherein communities generate and produce their own energy needs for own deeds.

Outcomes

"Solar Urja Lamp" encourages us to use of clean energy among future users of technology by practically and it encourage our youth to demonstrate and use of this natural resources to convert it to renewable energy.

Work Cited

www.energyswaraj.org - Energy Swaraj relies on the energy forms that are infinite as human lives. Dr. Chetan Singh Solanki "Solar Man of India".

References

1. **www.ggsy.in**- A Gandhi Global Solar Yatra- Student Solar Ambassadors-2019
2. Parker, Philip M "Photovoltaic power systems Electronic books. Photovoltaic power systems Solar cells Solar cells" San Diego, Calif. : Icon Group International, NetLibrary
3. M. Suresh, R. Meenakumari, "Optimal Planning of Solar PV/WTG/DG/Battery Connected Integrated Renewable Energy Systems for Residential Applications using Hybrid Optimization", International Journal of Industrial Engineering, 2018;2(1):15-20, *ISSN: 2456-8449*