



Renewable Energy Laboratory

Introduction:

The Renewable Energy Lab was established to create better awareness and understanding of solar energy as a free, non-pollutant, and clean energy among students and faculty members. It is useful to help, realize that for an individual or at a worldwide collective level solar energy is a must for effective human progress. To remove misconceptions about solar energy and improve global acceptability we have established a well-equipped laboratory to introduce the design and development of low-cost hybrid systems for domestic applications. It also provides new ideas about youth employment. The Renewable Energy Lab along with the Physics department is working on solar energy. The Renewable Energy Lab is also helpful for undertaking Projects based on Renewable Energy.

Details of Renewable Energy Lab:

| Sr. No | Laboratory | Area in | Major Equipments |
|--------|-------------------|--|--|
| 1. | Energy Laboratory | 1720.00 Sq. feet Or 160 sq. meters | <ul style="list-style-type: none">• Solar home light system with 5 panels (01) (1KAV)• Solar flat plate collector (02)• Solar Photovoltaic Panels (04)• Solar water Heater (01)• Solar cookers (10)• Solar dryer (04)• Solar Refrigerator (01) |

List of Different instruments in Renewable Energy Lab

1.Types of Solar Cookers :

1. Simple box types solar cooker
2. Modified box-type solar cooker
3. Box-type solar cooker with three reflectors
4. Box-type solar cooker with four reflectors
5. Commercial solar cooker
6. Cabinet-type solar cooker
7. Solar cooker with parabolic reflector
8. Solar cooker with rectangular reflector.



Fig. 1. Different types of Box type Solar Cookers



Fig. 2. Different types of parabolic reflector type Solar Cookers

2.Solar Refrigerator



Fig. 3. Solar Refrigerator

3.Solar dryers



Fig. 4. Different types of Solar dryers

4. Solar Still (to desalinate impure water)



Fig. 5. Different types of Solar Stills

5. Energy Bicycle: Pedal Power Energy Generation

It is an optimal and simple way to produce energy from pedal power. In this bicycle, the mechanical motion of the rotating wheel (powered by pedaling) is converted into electrical energy. The main concept behind this project is to harness the kinetic energy that is typically wasted in gymnasiums through exercise (on exercise bicycles).



Fig. 6. Energy Bicycle

6. Photovoltaic Cell:

A photovoltaic (PV) cell is an energy harvesting technology that converts solar energy into useful electricity (voltage and current) through a process known as the photovoltaic effect.



Fig. 7. Photovoltaic Panel


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