

SUMMARY

Solar energy conversion could be a major part of the solution to energy crisis and climate change issues.

Solar energy conversion is an emerging field as part of Renewable energy resources. Solar Thermal process for heating and Photo Voltaic for electricity are the core solar conversion methods. The technologies need monitoring to assure their performance and for further advancing.

The Photo Voltaic systems, on the roof of CEREB-LSBU, are recently installed. The main purpose of the study is to analyse performance of these systems and study their behaviour.

The study mainly include following concepts to enable analysis;

- Site information and installation
- Developing understanding of site location and geographical arrangement
- Equipments and system installation
 - Solar Geometry
- Understanding Sun and Earth geometrical relationship
- Calculating various aspects to find solar incidence angle
 - Solar Irradiation
- Identifying components of irradiation – Beam, Diffuse and Ground Reflected
- Establishing relationship between components and using concepts for actual data
 - Model Development
- Brief introduction to various tabs
- Summarising usage of model
 - Data and Performance analysis
- Actual data analysis
- Performance verification – actual against estimated