

Chapter Objective

1. To be understand the concept of photovoltaic cells
2. To be able to model, analyse and design photovoltaic systems

Chapter Motivation

Applications that need electrical energy especially in remote areas. Typical applications are lighting, electrical appliances, battery charging.

Sample Questions

1. Draw the i-v characteristics of PV cell and explain.
2. Develop the static model of the PV cell.
3. Connect two non-identical PV cells in parallel and explain the resulting i-v characteristics.
4. What is maximum power point tracking?
5. Explain how the input resistance of converters can be modulated using the duty ratio as the control input to track the maximum power operating point.
6. Draw the block schematic of the reference cell method of maximum power point tracking and explain.
7. What are the different storage mechanism and their applications?
8. How is PV sizing done for a given application?
9. What is DOD and how does it affect the battery life?
10. How is battery sizing done for a given application?