

Maximizing the Output of Solar Photovoltaic System

Authors : Vipresh Mehta , Aman Abhishek, Jatin Batra, Gautam Iyer

Abstract : Huge amount of solar radiation reaching the earth can be harnessed to provide electricity through Photo voltaic (PV) panels. The solar PV is an exciting technology but suffers from low efficiency. A study on low efficiency in multi MW solar power plants reveals that the electric yield of the PV modules is reduced due to reflection of the irradiation from the sun and when a module's temperature is elevated, as there is decrease in the voltage and efficiency. We intend to alter the structure of the PV system, We also intend to improve the efficiency of the Solar Photo Voltaic Panels by active cooling to reduce the temperature losses considerably and decrease reflection losses to some extent. Reflectors/concentrators and anti-reflecting coatings are also used to intensify the amount of output produced from the system. Apart from this, transformer-less Grid-tied Inverter. And also, a T-LCL immitance circuit is used to reduce the harmonics and produce a constant output from the entire system.

Keywords : PV panels, efficiency improvement, active cooling, quantum dots, organic-inorganic hybrid 3D panel, ground water tunneling

Conference Title : ICEESD 2015 : International Conference on Energy, Environment and Sustainable Development

Conference Location : Amsterdam, Netherlands

Conference Dates : August 06-07, 2015