



International Journal on Recent Researches In Science, Engineering & Technology

(Division of Electrical and Electronics Engineering)

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy.

It is an absolutely free (No processing charges, No publishing charges etc) Journal Indexed in JIR, DIIF and SJIF.

Research Paper

Available online at: www.jrrset.com

Chief Editor : Dr. M.Narayana Rao, Ph.D., Rtd. Professor, NIT, Trichy.

ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

Volume 3, Issue 4,
April 2015.

JIR IF : 2.54

DIIF IF : 1.46

SJIF IF : 1.329

Comparative Study of Solar MPPT Systems

M.DIVIYA¹, R.NAGARAJ², V.MURUGAN²

¹ Department of Electrical and Electronics Engineering, Jeppiaar Engineering College,
Chennai, INDIA

² Department of Atomic Energy, Bhabha Atomic Research Centre, Nuclear Desalination
Demonstration Plant, Kalpakkam 603102, INDIA

* Corresponding author. Tel: +91 9444225370, E-mail: vmgl@rediffmail.com

Abstract : One of the most essential needs of humans in the present day to day life is electricity. Among the energy source, solar energy is abundant and environmentally friendly. So conversion of solar energy into electricity not only improves generation of electricity but also reduces pollution due to fossil fuels. The output power of solar panel depends on solar irradiance, temperature and the load impedance. As the load impedance depends on application, a dc-dc converter is used for improving the performance of solar panel. The solar irradiance and temperature are dynamic. Hence an online algorithm which dynamically computes the operating point of the solar panel is required. The efficient conversion of solar energy is possible with Maximum Power Point Tracking(MPPT) algorithm. There are various MPPT algorithms available such as Perturb and Observe, Incremental Conductance and parasitic capacitance. The most prevalent methods in MPPT and their topology are compared and it is found that the best MPPT technique is the modified perturb and observe method compared to other techniques.