

Area Electrification using Renewable Energy

Madhuri B. Jadhav, G. M. Kulkarni, A. R. Sonawane

Department of Electrical Engineering
Guru Gobind Singh Polytechnic, Nashik, India

Abstract: *In this paper, a new MPPT technique is proposed which suggests a modified perturb and observe algorithm to reach fast to the MPP compared to the conventional perturb and observe technique. This work explains the PV equivalent circuit, current-voltage, power-voltage characteristics of photovoltaic systems and the operation of the some commonly used MPPT techniques.*

Keywords: MPPT techniques

REFERENCES

- [1]. "New Perturb And Observe Mppt Algorithm And Its Validation Data From Pv Module", Bikram Das, Anindita Jamatia, Abanishwar Chakraborti, Prabir Rn. Kasari & Manik Bho International Journal of Advances in Engineering & Technology, July 2012. © IJAET ISSN: 2231-1963/579 Vol. 4, Issue 1, pp. 579-591
- [2]. "A Fast PV Power Tracking Control Algorithm With Reduced Power Mode" Ashraf Ahmed; Li Ran; Sol Moon; Joung-Hu Park IEEE Transactions on Energy Conversion Year: 2013, Volume: 28, Issue: 3 Pages: 565 – 575.
- [3]. "Incremental Conductance MPPT Method for PV Systems". A. Safari and S. Mekhilef IEEE CCECE 2011.
- [4]. "Research Article Mathematical Model for Computing Maximum Power Output of a PV Solar Module and Experimental Validation" V. P. Sethi, 1 K. Sumathy, 1 S. Yuvarajan, 2 and D. S. Pal 3 Ashdin Publishing Journal of Fundamentals of Renewable Energy and Applications Vol. 2 (2012), Article ID R120312
- [5]. "High-Performance Constant Power Generation in Grid-Connected PV Systems", Ariya Sangwongwanich, Yongheng Yang, Member, IEEE, and Frede Blaabjerg, Fellow, IEEE, IEEE Transactions On Power Electronics, Vol. Pp, No. 99, 2015
- [6]. A Review of Single-Phase Grid-Connected Inverters Soeren Baekhoej Kjaer, Member, IEEE, John K. Pedersen, Senior Member, IEEE, and Frede Blaabjerg, Fellow, IEEE, IEEE Journal Of Photovoltaics, Vol. 3, No. 3, July 2013.
- [7]. "Design and implementation of MPPT solar system based on the enhanced P&O algorithm using Labview", GAGA Ahmed, ERRAHIMI Fatimay, ES-SBAI Najia ©2014 IEEE.
- [8]. "Modified Perturb and Observe MPPT Algorithm for Drift Avoidance in Photovoltaic Systems", Muralidhar Killi, and Susovon Samanta, Member, IEEE, 2015 IEEE Transactions On Industrial Electronics.
- [9]. "Design and Simulation of Incremental Conductance MPPT Using Self Lift Cuk Converter", M. Latha Devi, Mr. M. Chilambarasan, 2013 International Conference on Renewable Energy and Sustainable Energy [ICRESE'13].