

**COMPARATIVE STUDY BETWEEN TRADITIONAL MPPT ALGORITHMS AND  
FUZZY LOGIC MPPT (MODELLING AND SIMULATION)**

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**Abstract**

This paper describe comparative study between traditional MPPT method and fuzzy logic MPPT controller , we begin by modeling photovoltaic panel two diode model and show impact of different level of solar irradiation ,then we take two traditional MPPT algorithms perturb and observe and incremental conductance for research maximum power of photovoltaic panel , after that we use fuzzy logic controller for control of dc-dc cuk converter, all this models are implemented in Matlab/simulink , The results show that the method of fuzzy logic can quickly and correctly track change of MPP in different light intensity and the system has excellent stability performance.

**Keywords:** photovoltaic panel – MPPT –P&O-incremental conductance –fuzzy logic.

**REFERENCES**

- [1] Muhammad h. rashid , power electronics handbook ,Florida ,US, academic press 2001.
- [2] An Improved Two-Diode Photovoltaic (PV) Model for PV System IEEE 2010.
- [3] Shijie Yan, Jia Yuan, Lei Xu fuzzy logic control of MPPT for photovoltaic power system, fuzzy logic control of MPPT for photovoltaic power system.
- [4] Chung-Yuen Won, Duk-Heon Kim, Sei-Chan Kim, Won-Sam Kim, and Hack-Sung Kim, A New Maximum Power Point Tracker of Photovoltaic Arrays Using Fuzzy Controller ,IEEE,1994.
- [5] C. S. Chin P. Neelakantan ,H. P. Yoong ,K. T. K. Teo, Fuzzy Logic Based MPPT for Photovoltaic Modules Influenced by Solar Irradiation and Cell Temperature , UKSim 13th International Conference on Modelling and Simulation, 2011.