Insight Medical Publishing

Trends in Green Chemistry

ISSN 2471-9889

2020

Vol.6 Issue.1

A control strategy for photovoltaic system connected to grid

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Abstract

Photovoltaic energy has experienced great development. Research around the world covers this wide-ranging field, and tries to improve the performance of photovoltaic systems through manufacturing processes and the exploitation of new photovoltaic cell concepts and development of novel MPTT control strategies to ensure a good transfer of energy and eliminate the harmonics distortion of current and voltage in a photovoltaic system connected to grid a new ADRC technical control is implemented to achieve maximum power point (MPP).The performances of grid connected photovoltaic power system using DC-AC power inverters is studied using an active disturbance rejection control ADRC strategy developed to extract the maximum power of the solar energy, to maintain constant the DC-bus voltage, and to inject a suitable current into the grid with power factor near unity. It is susceptible to power grid disturbance, sudden environment changes and parameters uncertainties. The design tool achieves the control objectives i.e. power tracking and robustness due to external climatic variation.

ADRC method is a new technology for estimating and compensating uncertainties and disturbances, and has been explored and used recently as an alternative over classical techniques and especially PID controller. The aim is to control the converter in even with variation of atmospheric conditions and to ensure the regulation of the DC link voltage and deliver a sinusoidal current via DC-AC power system to the grid with a unity power factor. This paper is expected to provide more ideas for the researchers to apply the ADRC in a real prototype for power electronic converters control. A comparison with other strategies is studied and promises prospect of ADRC in the future industryIn the present talk, I would try to discuss the

need and the necessity of greening of chemistry curriculum at K12 level. I'm sureIt would be beneficial for not only students but also the teachers as well.

Biography:

Professor Zazi Khalida received the degree of engineer in electromechanical in 1988 from Rabat Higher School of Mines (ESMR), and preparatory certificate of research in 1997 from School Mohammedia of Engineering and a doctoral thesis in photovoltaics in 2017 from Faculty of Science and Technology Mohanmmadia, University Hassan II Casablanca. Having worked as aresearcherat the National Center for Scientific and Technical Research of Rabat (CNRST). Currently she is a teacher at the higher normal school of Technical Education of Rabat (ENSET) University Mohammed V Rabat since 2014.

Speaker Publications:

1."The window layers effect on the hardness improvement of space solar cells exposed to the 1 MeV electron irradiations"; Journal of Optical and Quantum Electronics, Vol-45,2013.

2."The Electromagnetic Interference (EMI) affect on power supply of Telecom equipment. International";Journal of Corrosionand Scale Inhibition, 2019.

3. "Economic analysis of wind-powered desalination in the south of Morocco"; Journal of Desalination.Cogent Environmental Science,Vol **-165**, **2004**.

11th World Congress on Green Chemistry and Technology July 09-10, 2020 Webinar

Abstract Citation:

A control strategy for photovoltaic system connected to grid, Euro Green Chemistry 2020, 11th World Congress on Green Chemistry and Technology-Webinar, July 09-10, 2020.

(https://greenchemistry.chemistryconferences.org/abstract/2020/a-control-strategy-for-photovoltaic-system-connected-to-grid)