MAXIMUM POWER POINT TRACKING FOR GRID CONNECTED PV SYSTEMS

By

Mohamed Mohamed Refaat Abdel-Haleim

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Electrical Power and Machines Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

"MAXIMUM POWER POINT TRACKING FOR GRID CONNECTED PV SYSTEMS"

Key Words:
Photovoltaic; Maximum power point tracking; Grid connected PV systems; Adaptive fuzzy logic controller (AFLC);

Summary:

This thesis focuses on the design of the control scheme applied to single-phase single-stage and two- stage grid connected PV systems. Maximum power point tracking of the PV array using adaptive fuzzy logic controller and genetic algorithm is one of the contributions of this work. This work also discusses the design of the controller applied to single-phase inverter using adaptive fuzzy controller. The theoretical and experimental results have demonstrated the efficiency of the proposed control scheme.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Mohamed Mohamed Refaat Abdel-Haleim Date: / /

Signature:

Dedication

I dedicate this work to my father (Mohamed Refaat -May Allah give mercy to his soul), my mother, my brother, my sisters and my fiancée.

Acknowledgments

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