



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكروفيلم

# بسم الله الرحمن الرحيم



**MONA MAGHRABY**



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكروفيلم



# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

### قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

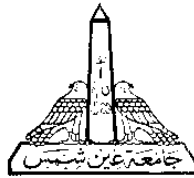


### يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



**MONA MAGHRABY**



AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING

Electrical Power and Machines Engineering

# **A control Technique for Four Leg Inverter to Diminish Electrical Grid Unbalance**

A Thesis submitted in partial fulfillment of the requirements of the  
degree of Doctor of Philosophy in Electrical Engineering

(Electrical Power and Machines Engineering)

by

**Eng. Mohamed Mostafa Ahmed El-sotouhy**

Master of Science in Electrical Engineering

(Electrical Power and Machines Engineering)

Faculty of Engineering, Cairo University, 2016

Supervised By

**Prof. Dr. Ahmed Abdel-Sattar Abdel-Fattah**

**Prof. Dr. Mostafa Ibrahim Mohamed Marei**

**Prof. Dr. Aziza Mahmoud Zaki**

**Associate Prof. Ahmed Ali Mansour**

Cairo - (2021)





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### **Supervision Committee**

#### **Name and Affiliation**

**Prof. Dr. Ahmed Abdel-Sattar Abdel-Fattah**

Electrical Power and Machines , Ain-Shams University

**Prof. Dr. Mostafa Ibrahim Mohamed Marei**

Electrical Power and Machines , Ain-Shams University

**Prof. Dr. Aziza Mahmoud Zaki**

Power Electronics and Energy Conversion Department,  
Electronics Research Institute

**Assoc. Prof. Ahmed Aly Mansour**

Power Electronics and Energy Conversion Department,  
Electronics Research Institute

#### **Signature**

*[Signature of Prof. Dr. Ahmed Abdel-Sattar Abdel-Fattah]*

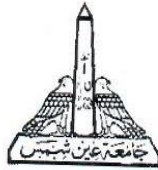
*[Signature of Prof. Dr. Mostafa Ibrahim Mohamed Marei]*

*AZiza Zaki*

*Ahmed Mansour*

Date: 26 June 2021





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### **Examiners' Committee**

#### **Name and Affiliation**

**Prof. Dr. Samir Sayed Abd-El-Hamid**

Electrical Power and Machines , Helwan University

**Prof. Dr. Naggar Hassan Saad**

Electrical Power and Machines , Ain-Shams University

**Prof. Dr. Ahmed Abdel-Sattar Abdel-Fattah**

Electrical Power and Machines , Ain-Shams University

**Prof. Dr. Mostafa Ibrahim Mohamed Marei**

Electrical Power and Machines , Ain-Shams University

#### **Signature**

*S.S. Abdel-Hamid*

*N.H. Saad*

*A.A. El-Sattar*

*M.I. Marei*

Date: 26 June 2021



# Statement

This thesis is submitted as a partial fulfillment of Doctor of Philosophy in Electrical Engineering Engineering, Faculty of Engineering, Ain shams University.

The author carried out the work included in this thesis, and no part of it has been submitted for a degree or a qualification at any other scientific entity.

**Eng. Mohamed Mostafa Ahmed El-sotouhy**

Signature

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26 June 2021



# Researcher Data

Name El-sotouhy	: Mohamed Mostafa Ahmed
Date of birth	: 09 / 02 /1987
Place of birth	: Ashmoun- Menofia -Egypt
Last academic degree	: Master of Science
Field of specialization Machines	: Electrical Power and Engineering
University issued the degree	: Cairo University
Date of issued degree	: 02/ 06/2016
Current job Electronics Research Institute	: Assistant Researcher at

