# بسم الله الرحمن الرحيم

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**تم رفع هذه الرسالة بواسطة / هناء محمد علي**

**بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.**

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AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING

Electrical Power and Machines Department

# MITIGATION OF HARMONICS OF RENEWABLE ENERGY SYSTEMS BY USING ACTIVE POWER FILTER TECHNIQUES

**By**

**Eng.: Muhammad Ossama Mahmoud Abdelrazeq**

M.Sc. in Electrical Engineering, Cairo University, 2015

A Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of **Doctor of Philosophy**

In

Electrical Engineering (Electrical Power and Machines Engineering)

**Supervised by**

**Prof. : Hamdy Saleh Khalil Elgohary**

**Prof. : Elsayed Abdelaleem Mohamed**

**Dr. : Wael Mohamed Mamdouh**

**Cairo - (2022)**

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Date: 12/02/2022

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