شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

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

HOSSAM MAGHRABY

Preparation and Characterization of Porous Silicon for Dye Sensitized Solar Cell

A Thesis Submitted to Faculty of Science-Ain Shams University in partial fulfillment for The Degree of Master of Science (M.Sc.) in Physics

By

Yara Gamal Saaoudy Mousa

B.Sc. in Physics - Faculty of Science- Ain Shams University-2015

Supervised by

Prof. Dr. Gamal Mahmoud Ali Youssef

Professor of Materials Science

Physics Department, Faculty of Science-ASU

Ass.Prof. Dr. Tamer Abdallah Fathy Sharaf

Associated professor of physics

Physics Department, Faculty of Science-ASU

Physics Department
Faculty of Science
Ain Shams University

2021

APPROVAL SHEET

Preparation and Characterization of Porous Silicon for Dye Sensitized Solar Cell

By

Yara Gamal Saaoudy Mousa

Supervisors	**Signature**
Prof. Dr. Gamal Mahmoud Youssef	**(…….)**
Professor of Materials Science	
Physics Department, Faculty of Science-ASU	
Ass.Prof. Dr. Tamer Abdallah Fathy	**(…...…..……..)**
Associated professor of physics	
Physics Department, Faculty of Science-ASU	

2021

Ain Shams University

Preparation and Characterization of Porous Silicon for Dye Sensitized Solar Cell

Name: Yara Gamal Saaoudy Mousa

Degree: M.Sc.

Department: Physics

Faculty: Science

University: Ain Shams University

Graduation Date: 2015- Ain Shams University

Registration Date: 8/10/2018

Grant Year: 2021

Acknowledgement

First and foremost, all favor is due to Allah. Thanks to Allah, Who gave me the energy to complete this work.

I would like to extend my thanks to my supervisors:

Prof. Dr. Gamal Youssef

The main supervisor of this work, for his suggestion of the research point, and for his continuous help, encouragement, support, and constrictive advice as my father before being my supervisor.

Ass.Prof. Dr. Tamer Abdallah, for his efforts and supporting me with his time. He always gave me his useful scientific advice which helped me to complete this work.

I would like to thank ***Prof. Dr. Nabil El-faramawy*** the chairman of the physics department, for his encouragement and support.

And I would like to thank ***Prof. Dr. Hassan talaat*** for giving me permission to open his lab.

Besides my supervisors, I would like to thank ***Prof. Dr. Hany Hashem*** and ***Prof. Dr. Emad El-Menyawy*** for their fruitfull help.

I wish to thank all people who helped me to complete this work.

My deep thanks to my father ***Dr. Gamal Saaoudy*** for his great encouragement and help to complete this work. Also, I would a like to thank his friend and brother ***Prof. Dr. Mohamed saad***.

My special thanks to my mother ***Mr's.Nahed Abdelall*** for her standing beside me from the beginning until I finish this work. She helped with all things, as well as her continuous support.

And I would like to thank my brother ***Mohamed*** and my sister ***Misaa*** and her husband ***Mr. Mostafa*** and their lovely little son ***Mohamed*** for their continuous support.

I would like to thank my friends (***Dr.Hend , Fatama, Hager, Ayah, Aalaa, and Ekram***) for their assistance and supporting.

Finally, I would like to thank my students especially, (***Ibrahim, Youssef, Sameh, Youmna, and Aalaa***).

I would like to thank everyone who helped me to complete this work.

Thank you all

Yara Gamal Saaoudy

Table of contents

List of Figures