Photothermal Study of Semiconductor Nano-particles for Photovoltaic Applications

A Thesis
Submitted to the Faculty of Science
Ain Shams University
In Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy in
Physics

By

Ali Badawi Mustafa Ali
M.Sc. University of Jordan (1997)

Supervised by

Prof. Dr. Hassan Talaat
Prof. of Experimental Physics
Faculty of Science
Ain Shams University

Prof. Dr. Najm Al - Hosainy
Prof. of Quantum Optics
Faculty of Science
Taif University

Prof. Dr. Saied Abdallah
Prof. of Experimental Physics
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This thesis entitled: **Photothermal Study of Semiconductor Nano-particles for Photovoltaic Applications** written by: **Ali Badawi Mustafa Ali** has been approved for Physics Department, Ain Shams University

Date

Date

Date

The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.

I hereby declare that the work contained in this thesis, now submitted for the degree of Doctorate of the philosophy of Science (Physics) to Ain Shams University, is the result of my own investigations.

_____ Candidate (Ali Badawi Mustafa Ali)

_____ Supervisor (Prof. Dr. Hassan Talaat)

_____ Supervisor (Prof. Dr. Najm Al-Hosainy)

_____ Supervisor (Prof. Dr. Saied Abdallah)

I hereby certify that the work embodied in this thesis has not already been accepted in substance for any degree, and is not currently being submitted for any other degree.

_____ Candidate (Ali Badawi Mustafa Ali)

To

My Parents,

My wife,

My sons: Mohammad,

Ahmad, and Khalid,

My sisters and brothers.

With respect and love.

Ali Badawi Mustafa Ali

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