

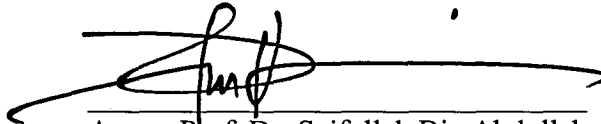
**THE EFFECT OF CURRENT DENSITY ON
NANOSTRUCTURED POROUS SILICON**

NURUL ILHAM BINTI ADAM

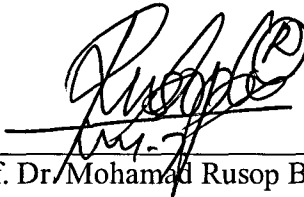
**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Bachelor of Science (Hons.) Physics
In the Faculty of Applied Sciences
Universiti Teknologi MARA
Malaysia**

NOVEMBER 2008

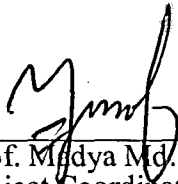
This Final Year Project Report entitled "The Effect Of Current Density On Nanostructured Porous Silicon" was submitted by Nurul Ilham Binti Adam, in partial fulfillment of the requirements for the Degree of Science (Hons) Physics, in the Faculty of Applied Sciences, and was approved by



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ACKNOWLEDGEMENTS

First and foremost, praised to Allah Subha Nahu Wata'ala for His blessing which has enabled me to complete this project report. Here I would like to extend my gratitude and appreciation to my project supervisor, Associate Professor Dr. Saifollah Bin Abdullah and my co-supervisor, Associate Professor Dr. Mohamad Rusop Bin Mahmud for their guidance, advice and give an opportunity to do this project with them. I'm so thankful for their motivation and encouragement towards completing this final project report. Further, also a lot of thanks to my beloved husband Mohd Fadzli Bin Darus and my parents for their support, understanding and love. Their pray made me become more patience while completing my study in UiTM. My special gratitude and thanks to PHD student En.Zainizan , master students Hartinie Mohd Rafea and Suhaidah Amizam and also to research assistants, Azmah Mohd Ajis and Shamsul Faez Mohamad Yusop for their commitment and cooperation. To all my friends, thanks for their support in collecting information and ideas. Lastly, I would like to thank to everyone who has gave hands directly or indirectly involve during completing this project.

Nurul Ilham Binti Adam

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ABSTRACT

THE EFFECT OF CURRENT DENSITY ON NANOSTRUCTURED POROUS SILICON

The work presents the effect of the current density on nano-structured porous silicon through the electrochemical etching process using Hydrofluoric acid (HF) and Ethanol (CH₂OH) at ratio 1:1. In this research, the current density is increased during the anodization process regarding the etching time and the distance of the electrode are constant. Atomic Force Microscope (AFM) measurement and Photoluminescence Spectrometer (PL) analysis were performed to investigate the physical and the optical characteristics of the interface region of porous silicon. The result shows that the roughness of the porous silicon surface was increased when the current density increased. The PL measurement indicates that the PL intensity and the Photon energy increased with the increasing value of current density. This research discovers that the current density has large effect on the nanostructured porous silicon on the structural and optical properties.