

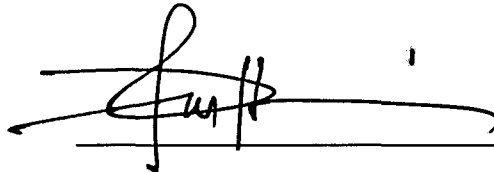
**EFFECT OF HYDROGEN PEROXIDE (H₂O₂) IN POROUS
SILICON AS NITROGEN GAS SENSOR**

TAHIRAH BINTI MAT WAIJAR

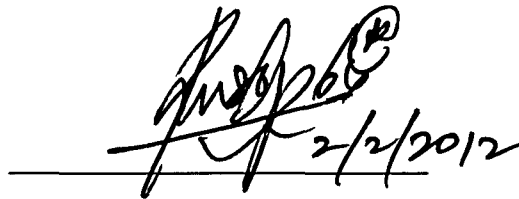
**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Industrial Physics
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

JANUARY 2012

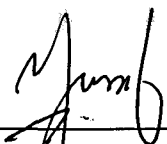
This Final Year Project Report entitled “Effect of H₂O₂ in Porous Silicon as Nitrogen Gas Sensor” was submitted by Tahirah Binti Mat Waijar, in partial fulfillment of the requirements for Degree of Bachelor of Science (Hons.) Industrial Physics, in the faculty of Applied Sciences, and was approved by



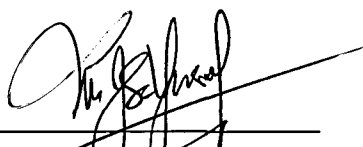
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ACKNOWLEDGEMENTS

Bismillahirrahmanirahim,

I would first like to thank Prof. Dr. Saifollah Bin Abdullah as my supervisor for the advice and guidance during the development of my final year project. The project would not be complete without the guidance of him. Additionally, I would like to thank Assoc. Prof. Dr. Rusof Bin Mahmood as my co-supervisor for his rapid and generous help under short notice.

I would also like to thank all the members of this final year project. Their collective pool of knowledge is an incredible opportunity to experience. The facilities at NST Laboratory and Faculty of Applied Sciences laboratory were of profound benefit in this project. In particular, thanks are due to the staffs and seniors of their helping and support.

Finally I would like to thank my parents for their support and guidance and also to my entire friend who insightful encouragement and criticism throughout this project.

Tahirah Binti Mat Waijar

ABSTRACT

The effects of Hydrogen Peroxide (H_2O_2) in porous silicon to detect Nitrogen gas were investigated. Three major types and another extra two types of PSi samples have been prepared. One of the PSi sample prepared with typical HF anodizing solution and other two major samples anodized with the presence of H_2O_2 in 20 minutes (30% and 35% respectively) in the solution. Then, another two samples were prepared with presence of 35% concentration of H_2O_2 in 10 minutes and 30 minutes respectively. Samples anodized with H_2O_2 solution showed a porous silicon structure with higher porosity compared to those not treated with H_2O_2 that shown through micrograph of FESEM. Then, samples that anodized with presence of 35% concentration of H_2O_2 in 30 minutes etching time show more porous than sample that used similar solution for 10 minutes etching time. Moreover, effect of H_2O_2 based porous silicon sample fabricated as nitrogen gas sensor showed better electrical (I–V) sensitivity compared to those without H_2O_2 .

TABLE OF CONTENTS

	Pages
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	xi
ABSTRACT	xii
ABSTRAK	xiii
CHAPTER 1 INTRODUCTION	
1.1 Background and Problem Statement	1
1.2 Significance of study	3
1.3 Objectives of study	3
CHAPTER 2 LITERATURE REVIEW	
2.1 Introduction	4
2.2 Silicon	4
2.3 Porous Silicon	
2.3.1 The characteristic of PSi	5
2.3.2 Formation of PSi	5
2.4 Gas Sensor	9
2.3.1 Gas Testing System (GTS)	10
2.3.2 Gas chamber for testing PSi as a sensor	11
2.5 Nitrogen Sensor	
2.5.1 Nitrogen	12
2.5.2 N ₂ sensor	14
CHAPTER 3 METHODOLOGY	
3.1 Introduction	15
3.2 Cleaning of Silicon Wafer	16
3.3 Fabrication of PSi	17
3.4 The Characterization of PSi	
3.4.1 Field Emission Scanning Electron Microscope (FESEM)	19
3.4.2 Photoluminescence (PL) Spectroscopy	20
3.5 Preparation of Porous Silicon N ₂ Sensor	21
3.6 I-V Characterization	22