

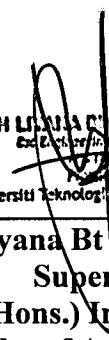
**THE EFFECT OF ALUMINUM (AL) FOIL SIZES DURING  
METALIZATION PROCESS FOR PN JUNCTION FABRICATION**

**FIRDAUS FARHAN BIN ZAINAL ABIDIN**

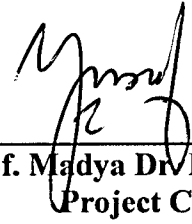
**Final Year Project Report Submitted in Partial Fulfillment Of The  
Requirement for the Degree of Bachelor of Science (Hons.) Industrial  
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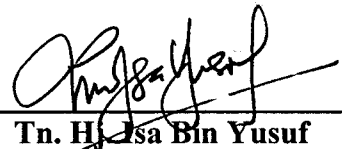
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This Final Year Project Report entitled “The Effect of Aluminum (Al) Foil Sizes during Metallization Process for P-N Junction Fabrication” was submitted by Firdaus Farhan Bin Zaidin, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Honours) in Industrial Physics, in the Faculty of Applied Sciences, and was approved by

  
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## TABLES OF CONTENT

	Page
APPROVAL SHEET	i
ACKNOWLEDGEMENT	ii
LIST OF TABLES	v
LIST OF FIGURE	vi
ABSTRACT	ix
ABSTRACT	x
CHAPTER 1 INTRODUCTION	
1.1 Background of semiconductor	1
1.2 Crystal structure	2
1.3 Energy band gap	3
1.3.1 Fermi level	3
1.4 Intrinsic semiconductor	4
1.5 Extrinsic semiconductor	4
1.5.1 N-type semiconductor	5
1.5.2 P-type semiconductor	5
1.6 P-N junction	5
1.6.1 Forward biased P-N junction	6
1.6.2 Reversed biased P-N junction	6
1.7 Metallization	7
1.8 Problem Statement	8
1.9 Significance of Study	8
1.10 Objective of Study	9
CHAPTER 2 LITERATURE REVIEW	
2.1 Metallization	10
2.2 Type of Metallization processes	11
2.3 Type of Metal	12
2.4 Thickness of Metallization layer	12
2.5 I-V characteristic	15

## **ABSTRACT**

### **THE EFFECT OF ALUMINUM (AL) FOIL SIZES DURING METALIZATION PROCESS FOR PN JUNCTION FABRICATION**

This project is done to obtain the effect of aluminum foil sizes during the metallization process for p-n junction fabrication. The p-n junction is a basic semiconductor device which contains p-type and n-type material. Metallization is one of the crucial processes in order to obtain a good and reliable contact in the semiconductor devices. This process is an adding process that deposit metal layers on the wafer surface. In this project, Si (100) p-type wafer is used as the based material of this p-n junction device. Aluminum is widely used as the material to fabricate the conducting lines for the transportation of the electrical power. Since the metallization is important in the semiconductor fabrication; this project is done to determine the effect of various aluminum foil sizes on the p-n junction in order to produce the ideal metallization. Basic process such as oxidation, lithography, diffusion and metallization would be done through the whole fabrication process. After the fabrication is done and complete, the ideal p-n junction is the sample with the  $5 \times 3 \text{ cm}^2$  Al foil size. This sample has the ON voltage of 0.8 V and resistance of 441  $\Omega$ . The measurement of resistance and ON voltage was calculated using the I-V measurement and the thickness of the Al layer is calculated to be 3492 Å by using the surface profiler.