

**PRODUCER-GAS FROM AGRICULTURE SOLID
WASTE**

**NORMAHAZAN BIN MOHAMED
(2000357182)**

A Thesis submitted in partial fulfillment of the requirements for the award of
Bachelor of Engineering (Hons.) Mechanical

**FACULTY OF MECHANICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA (UiTM)**

NOVEMBER 2005

ACKNOWLEDGEMENT

I wish to thank En. Najmi bin Mohamed, lecturer for the faculty of mechanical engineering for giving me the chance to do my final project titled “produced gas from agricultural solid waste” till the project was completed. He gave me a lot of guidance and support which were very useful to me and I wish to sincerely thank Department of Chemistry for giving me permission for the usage of instrument for my study.

I also wish to thank En. Ibrahim Bin Muhamad, manager of Panji Alam Bhd located at Port Dickson for giving me permission to visit and collect palm shell for my study.

My sincere thanks to the Department of Chemistry for giving me permission for the usage of instruments for my study.

ABSTRACT

The project of “Producer-gas From an Agriculture Solid waste” to determine an efficient gasification processes and palm shell was selected as a source of solid waste fuel for the combustion chamber which was designed to obtain the gas emitted from the combustion of palm shell and stoichiometric as a reference for comparison. Instruments used Calorimeter, Palaron 5C7640 Sputter Coater, Scanning Electron Microscope (SEM), Gas Chromatography Mass Spectrometry and Gas Analyzer.

TABLE OF CONTENT

CONTENT	PAGE
AUTHOR DECLARATION	
CERTIFICATION	
ADVISOR	ii
HAED OF PROGRAME (PLK)	iii
PAGE TITLE	iv
ACKNOWLEDGEMENT	v
ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF TABLE	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xiii
CHAPTER 1 INTRODUCTION	
1.0 Introduction	
1.1 Project Objectives	2
1.2 Project Scope	2
1.3 Methodology	2
CHAPTER II LITERATURE REVIEW	
2.0 Introduction	4

CHAPTER 1

INTRODUCTION

1.0 Introduction

There is abundance of agricultural solid wastes that can be utilized as an alternative energy source. Due to its increasing rate of generation, both can be categorized as renewable sources that have the potential to replace, to an extent, the dependency on fossil fuels as a source of power.

Production of combustion gases from these waste fuels is a method to convert the fuels from bulk solid form to another, much more mobile, form. Carbon and hydrogen are dominant compositions in solid waste fuels, and thus the production of methane is viable. This project is focused in researching efficient processes that can be applied to produce methane from solid waste fuels from agriculture sectors.