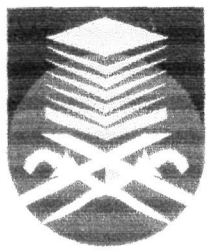

REGULATED COMBUSTION CHAMBER AS A THRUST INITIATOR

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In the name of ALLAH, The Most Beneficent and Merciful. I praise Him and seek His blessings on His noble Prophet (peace be upon Him).

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"May ALLAH Bless You"

ABSTRACT

This project most likely as laboratory simulation of small rocket engines system as well. In this thesis, chapter 1 addresses the introduction to the project. It deals with the propulsion system. Apart from that, the objectives of this project are described as well as the scope of project. Chapter 2 introduces the thrust concept and theory of thrust developed by propulsion system is presented in brief. All the theories are based on the thermodynamics and fluid mechanics point of view. In this chapter, the relevant equations that is important for the thrust is defined. Chapter 3 was discussed in brief of the chamber. In this chapter the related equation of designing the combustion chamber are presented. Chapter 4 is discussed about the testing equipments required in this project. Test stand was review in chapter 5 where the design is developed. Chapter 6 relates to the safety requirements while doing this project. This section focus on operation of the system before and at the same time as the testing is operated. The ignition system and how it operates is discussed in chapter 7. Testing and analyzing of thrust developed by combustion system was discussing in chapter 8. The discussion, conclusion and recommendation are imparted in chapter 9, 10 and 11 respectively.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

The combustion of liquid fuels is of considerable technological importance to a diversity of applications ranging steam raising, furnace, space heating, and diesel engines to space rockets. Deep knowledge of combustion process is needed to specify the need in order to control pollution emitted in all aspect of combustion and at same time to maintain the performance and efficiency of good combustion. The basis process involved is the disintegration or atomization of the liquid fuel to produce a spray of small droplets in order to increase the surface area so that the rates of heat and mass transfer during combustion are greatly enhanced. Therefore, the combustion process is exists to understand the behavior and heating for each component in this process.

The combustion process between fuel and oxygen is actually useful to our country industry. It usually used to change the chemical energy to build the heat transfer in combustion chamber or it used in engine system. Any material that can be burned to release thermal energy is called a fuel. Most familiar fuels consist primarily of hydrogen and carbon. They are called Hydrocarbon fuels and are denoted by the general formula C_xH_y.