CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This project title is fabrication of automotive body part using carbon fiber. The material use in this project will reduce the mass of automotive part, increase the acceleration of vehicle and also can stand high impact. This carbon fiber part is produced by 2 layers of E-glass chopped strand using the polyester resin and one layer of 3K carbon fiber using the epoxy resin. The fabrication required student to familiar the procedure and safety on handling fiber glass and carbon fiber and other materials such as resin and other solvent.
1.2 PROBLEM STATEMENT

The common automotive parts in market or factory are typically made out of steel, but aluminium is rapidly gaining popularity with auto companies. Although these materials are tough enough to absorb the high energy from the crash but it's quite heavy to use. Using the fiberglass (glass-fiber reinforced plastic, or GFRP) and carbon fiber are not only increasing the acceleration and reduce the mass of automotive part but it will also provide versatility and freedom of design, strength & durability.

1.3 OBJECTIVE

There are three objectives of this project as follow:

i. To fabricate automotive component using carbon fiber.

ii. Reduce the mass of automotive component

iii. Increase the acceleration of vehicle

The function of this project objective is to determine whether the result of the product is fulfill the objective or not.

1.4 SCOPE

The scope of this project is:

i. Fabricate the carbon fiber part with good surface finish.

ii. Reduce the weight of the body part

iii. One layer of Carbon Fiber with two layer of fiberglass
The function of the scope is to control the fabrication of the product so that the work that performed is under the objective.

1.5 THESIS ORGANIZATION

Chapter review is to briefing the chapter shortly from chapter one until chapter five. This is to make sure that the chapter is under the title that given.

i. Chapter one

In chapter one, there is introduction. Which is include project synopsis, project scope and project objective. Based on this chapter, the title of the project can be determines. Besides that, the objective of this project was listed and to control the objective there is the project scope.

ii. Chapter two

Chapter two consists of literature review. At this chapter, the background of the part and materials that use can determine. Besides that, the type and advantages of the product that use also can be known. The method and type of joining also listed in this chapter.

iii. Chapter three

This chapter is methodology. This chapter consists of the flow chart of the project. How the project is worked and flow also can be known. What the method that use in this project can be determine. Besides that, there is the step or procedure of making the fiber glass and carbon fiber part.