

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND FABRICATION OF  
PORTABLE SOLAR COOKER**

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## **ABSTRACT**

This project objectified performing a modified version of a portable solar cooker that has the same function as existing products while being much eco-friendlier and more reasonable in price. Using the materials aluminum as a substitute for using stainless steel metal will not only reduce the manufacturing cost by up to 70% but it will be effortless for the user to find spare parts if any element of the product goes awry. The product is fabricated with solar energy as its sole source of energy, which can be an additional point for individuals and communities that place concern for nature as their number one priority. This project discusses the material used, the time needed for the process, and the result obtained. In conclusion, based on the demonstration of the project, the authors discussed the advantages and points that need to be considered to make sure the process approximates the expected result.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Malaysia is a country that encourages tourism and leisure activities. People are encouraged to explore nature as it will be beneficial for our well-being and the country's economic status. A lot of outdoor activities are concluded but the project would specifically highlight the matter of outdoor cooking, which would be the project's main topic. As cooking is one of the main activities for outdoor activities and is becoming trending day by day, the project would like to propose a better, healthier way to do it without harming the environment, which is with the use of a portable solar cooker.

### 1.2 Problem Statement

The problem statements of this project would be:

1. Existing portable cooker products are hazardous to nature. Portable cookers that use Liquefied Petroleum Gas (LPG), Liquefied Butane Cartridge, and charcoal are dangerous as it is inflammable and tends to release greenhouse gases such as Carbon Dioxide (CO<sup>2</sup>), and Sulphur Dioxide (SO<sup>2</sup>). These gases will likely contribute to air pollution and global warming as stated in the Air Quality Index (AQI) of Malaysia. Be concerned about Malaysia's air pollution issues that originated from emissions from a huge number of industrial manufacturing companies, power generation, most vehicles, and open burning activities that are still practiced amongst netizen that lives in the sub-city and also in some farming activities, such as rice farming. All of these greenhouse gases have the same outcomes in general, which is to negatively impacted nature.
2. Generally, solar cookers that use solar energy are pricey in Malaysia. The issue arises when users who are on a budget stand to choose products that are economically friendly.