UNIVERSITI TEKNOLOGI MARA

DESIGN, ANALYSIS AND FABRICATION OF BLADELESS FAN

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ABSTRACT

Introducing the innovative portable bladeless fan— a cutting-edge type of cooling solution that redefines comfort & convenience. This sleek & elegant fan prioritizes safety without sacrificing style thanks to its lightweight & compact design, making it perfect for people with hectic schedules. It provides rapid cooling wherever needed, making it ideal for people who lead active lives at work, on outdoor excursions, or on the road. As there are no visible blades, families & outdoor enthusiasts looking for a fashionable & safe cooling companion can feel at ease. Users who care about the environment will find its energy efficiency appealing as it complies with modern sustainability standards. This bladeless fan offers a useful and fashionable cooling solution for modern lifestyles in a portable package by combining mobility, safety, and eco-friendly design.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Fans have been around for thousands of years with their main goal – to provide relief from hot weather or environment. The origin of fans in which the earliest fans were simple handheld devices made from natural materials such as leaves and feathers, which were also used in the same way that table fans is used, to create cooling breeze. From this simple design, fans are developed and enhanced over the years into delicate and complex devices, some are used in a different system than others.

All year long, Malaysia's climate is characterized by high temperatures and levels of humidity. According to data from the Malaysian Meteorological Department, the average temperature in Malaysia ranges from 26°C to 28°C, with maximum temperatures exceeding 30°C in many parts of the country [1]. In addition, Malaysia's relative humidity hovers around 80% on average, often topping 90% in coastal areas. The intense heat sometimes leads to numerous health issues all over Malaysia, most commonly heat stroke. According to data from the Malaysian Ministry of Health, there were over 6,000 cases of heat-related illnesses in Malaysia in 2020. While high humidity levels could lead to issues like mold growth, which could affect indoor air quality and lead to respiratory problems. According to a study by the Malaysian Society of Allergy and Immunology, mold allergies are a common issue in Malaysia, affecting up to 20% of the population.

Table fans provide an adequate solution to the issue. Table fans could provide the cooling effect that is the most cost-effective. This could help reduce the feeling of heat and humidity as it circulates air. Consequently, this could aid lessen the risks of heat related illnesses and mold allergies. Nevertheless, table fans have their drawbacks. One of the flaws of table fans is that they accumulate dust over time. After a while, usually the blade of the table fan and its fan guard collects dusts. This could potentially