UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF THE HUMIDIFIER AND AIR FRESHENER

MUHAMMAD SYAZWAN FATHULLAH BIN MOHD YUNUS

Dissertation submitted in partial fulfillment of the requirements for the degree of **Diploma** (Mechanical Engineering)

College of Engineering

March 2022

ABSTRACT

Humidifiers are commonly used to humidify a single room such as an office, living room, and else. The common problem that happened in our daily life is the unpleasant smell in our room. To counter this problem, we need something that can odour elimination. Because of that, we need to develop the humidifier and air freshener by using Arduino which is this product can make our air room fresh and also it can humidify the entire room. The humidifier is an effective and simple way to combat exposure to harsh, dry air. Adding a cool mist of water to the air in your room with a mini humidifier while you sleep could help to alleviate these uncomfortable symptoms, often overnight. There are two objectives in this project which are to design a humidifier and air freshener by using the Solidwork software and to fabricate the humidifier and air freshener provide 2 functions which are humidifying the room air and to freshen up the room space. The advantages of this product can help people to moisturize the skin to prevent dryness skin also prevent unpleasant room odours. More importantly this product easy to use and easy maintenance.

ACKNOWLEDGEMENT

Firstly, I wish to thank god for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor, Madam Nor Liawati Bt Abu Othman.

Finally, this dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah

TABLE OF CONTENTS

CON	FIRMATION BY SUPERVISOR	ii
AUTI	HOR'S DECLARATION	iii
ABST	TRACT	iv
ACK	NOWLEDGEMENT	v
TABI	LE OF CONTENTS	vi
LIST OF TABLES		viii
LIST	OF FIGURES	ix
LIST	OF ABBREVIATIONS	xi
CHAI	PTER ONE : INTRODUCTION	1
1.1	BACKGROUND OF STUDY	1
1.2	PROBLEM STATEMENT	2
1.3	OBJECTIVES	3
1.4	SCOPE OF WORK	3
1.5	SIGNIFICANCE OF STUDY	4
CHAI	PTER TWO : LITERATURE REVIEW	5
2.1	INFORMATION OF HUMIDITY AND HUMIDIFIER	5
2.2	HUMIDIFICATION SYSTEM	6
2.3	PATENTS OF EXISTING HUMIDIFIER	9
2.4	AIR FRESHENER	10
2.5	PRODUCT DESIGN SPECIFICATION	11
CHAI	PTER THREE : METHODOLOGY	12
3.1	INTRODUCTION	12
3.2	PROTOTYPE DRAWING AND BILL OF MATERIAL, (BOM)	12
	3.2.1 PROTOYPE DRRAWING	12
	3.2.2 BIL OF MATERIAL, (BOM)	22
3.3	CALCULATION AND COMPUTATIONAL ANALYSIS	23

CHAPTER ONE INTRODUCTION

1.1 BACKGROUND OF STUDY

The humidifier is a therapy that adds moisturize to the air with the help of ultrasonic vibration to prevent the dryness that can cause irritation in many parts of the body plus ease some symptoms caused by the flu or typical aid. With the help of ultrasonic vibration, it converts water as a filter to a vapour that spreads to the air to humidify the air. Humidifier has come with various of size which is the big size is always used at home or in hospitals that can humidify the air in a large-scale room the smallest size is used for personal.

This humidifier and air freshener are called portable humidifiers or are known as personal humidifiers. That is because the size of a personal humidifier is smallest than another existing humidifier at home that usually functions as moisturizing the air the whole big room. By using Arduino software, it can control humidifier mist produce and also show the temperature and relative humidity in the room. Plus, the air freshener as supporting to create fragrant and fresh smell in the room or environment.

The humidifier is suitable for people who face the problem of dry skin and room odour problems. This humidifier is to prevent dry skin and produce a comfortable environment in the room. The humidifier and air freshener do not use in a large-scale room. The humidifier and air freshener also serve as air fresheners which is adding some essential oil into the water tank to create the environment fresh. An air freshener works to prevent unpleasant smells or musty smells. An air freshener is a deodorant that is used to eliminate odours either by a chemical reaction or by providing a refreshing, masking scent.