



UNIVERSITI TEKNOLOGI MARA

**FINAL REPORT :
AUTOMATIC HUMIDITY CONTROL SYSTEM**

**NURHANISAH IZZATI BINTI MASTOR
NUR ALIA AYUNI BINTI MOHAMMAD**

**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
PULAU PINANG**

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ABSTRACT

This project is designed to detect the humidity percentage and temperature in the environment. Hence, it will control the humidity to the normal percentage of humidity by output produced from this project which is DC fan and LCD that will turn on and display percentage of humidity. This is also one of the ways to overcome the problem of electronic devices always malfunction. Furthermore, this project consists of buzzer and LED which helps to alert people nearby if that time the humidity percentage is high. The coding for the programmable IC (PIC16F877A) microcontroller has been generated using MikroC while Proteus 7 is used to design and simulate the circuit by drawing the schematic diagram in ISIS and PCB layout in ARES. It is important to do the simulation first before fabricating the design prototype to prevent any mistake that will affect our expected output. After that, the circuit is tested on the breadboard to get the expected result. It is observed that electronic devices can be prevented from malfunction. At the same time, can save cost because mostly electronic devices not broken even the humidity low or high.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Humidity sensors have many applications in industry and domestic areas. Humidity is the amount of water vapour in the air. Water vapour is the gaseous state of water and invisible. Humidity indicates the probability of precipitation, dew, or fog.

Atmospheric humidity is a measure of water held in the air as a gas. Water can be solid (ice), liquid (water) or a gas (vapour). The vapour component makes up about 99% of all water held in the atmosphere. The air that we breathe is a mixture of gases - mostly nitrogen (78%) and oxygen (21%) with small amounts of carbon dioxide, argon and water vapour among other things.

Warmer air can carry more water vapour than cooler air, if there is plenty of water available. This is because it has more energy to evaporate water into vapour, and keep it in this state. The tropics are very warm and very humid - the air in the tropics contains lots of water vapour. There is very little water vapour over the very cold Arctic and Antarctic. Some very warm regions are also very dry (e.g. the deserts of the Sahara), because there is very little available water to evaporate into vapour, and at about 30 degrees north or south of the equator the air descends from above and is already very dry.

Water vapour is one of the key greenhouse gases. Indeed, without it we would not be able to live on Earth. A greenhouse gas allows the sun's energy to pass through and warm the Earth. The Earth then radiates energy away but some of this is trapped on the way out by greenhouse gases adding extra warmth. The average temperature of the Earth at the surface is 14.5 °C. Without any greenhouse gases it would be around -18°C. Water vapour is the most prolific greenhouse gas in the atmosphere.