SMART POND DETECTOR
APPLICATION IN
BARAMUNDI QUALITY OF WATER

AHMAD NAZIRUL BIN MOHD
AHMAD ZAKWAN BIN GHAZALI
FAZREEQ FAIZ BIN ANUAR

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

MARCH 2015

TABLE OF CONTENTS

ACKNOWLEDGEMENT

In the Name of Allah, Most Gracious, Most Merciful

Alhamdullilah to the first and foremost, Almighty Allah SWT for giving us patience and strength to complete this final year project which adapted and refers from various books and sources. Many people have contributed to this project and made few suggestions based on their experience.

Here, we would like to express a sense of gratitude to our supervisor, Sir Muhamad Muzamil Bin Mustam for supervising us through this project from the beginning until it comes to end. Next, special thanks we give to both of our family for their supports, patience and understanding. Last but not least, big thanks to all of our friends who struggle in their own projects but still managed to help us with this project.

It has been a great pleasure cooperates with those peoples. Nevertheless, loopholes are expected in this report. Therefore, other references also needed to achieve an excellent result.

ABSTRACT

A pH (power of hydrogen) is a simply a measurement of the acidity or alkalinity of a solution. A pH of 7 is considered to be 'Neutral' neither acid or alkaline while pH above 7 is alkaline or 'Base' and below 7 is acidic. For final year project, **Smart Pond Detector** has been chosen as a project that wanted to be done. The reason of carried out this project because each source of water on earth has a different concentration of salt. So, this project will control the concentration of salt in pond at the house. The concentration of salt that needed by the aquatic living are different such as concentration at the river and at the sea are totally different. So, this thing can ease the people that want to farm different type of aquatic living that having type of habitat at the same time. When this project is done, it can be implemented at the house that have a pond. Lastly, this project want to be done because aquatic living also need to stay healthy where ever they live.

CHAPTER 1

INTRODUCTION

1.1 Background Of Study

A glass electrode is perhaps the most successful electrochemical sensor. It provides information about the activity of hydronium ions, H_3O^+, in water. Because water, which mildly dissociates to H_3O^+ and OH^- ions, is the most common solvent medium, and chemical reactions in water largely depend on H_3O^+ activity, the ability to measure it is essential. And conversely, because H_3O^+ activity, or rather, its negative logarithm, the pH, is so easy to measure, pH is the most commonly monitored and recorded parameter of liquid samples. A glass electrode is actually a device, not an electrode in an electrochemical sense of the word. It consists of a glass bulb membrane, which gives it its name and an electrically insulating tubular body, which separates an internal solution and a silver/silver chloride electrode from the studied solution. The Ag/AgCl electrode is connected to a lead cable terminated with some connector that can hook up to a special voltmeter, the pH meter. The pH meter measures the potential difference and its changes across the glass membrane. The potential difference must be obtained between two points, one is the electrode contacting the internal solution.

A second point is obtained by connecting to a reference electrode, immersed in the studied solution. Often, this reference electrode is built in the glass electrode (a combination electrode), in a concentric double barrel body of the device. The combination electrode, a glass electrode and separate reference electrode , are functionally identical. It is a common misconception that the combination electrode requires only one lead, fostered because the round coaxial lead to the electrode looks like a single wire.