

UNIVERSITI TEKNOLOGI MARA  
KAMPUS BUKIT MERTAJAM  
2005

FINAL REPORT OF DIPLOMA PROJECT

FACULTY OF ELECTRICAL ENGINEERING



ULTRASONIC PEST REPELLER

NURLY IZANA MOHAMAD NASIR  
MAIZATUN MUHAMAD

## **ACKNOWLEDGEMENT**

The team was formed and the project was defined. The tasks were broken down according to our strengths. The report has been prepared as the outlines, as well as our strategy to have a well-done project.

We would like to take this opportunity to thank a number of people who contributed significantly in assisting the development of this study.

Words are insufficient to thank our supervisor, Puan Alhan Farhanah Binti Abd Rahim, who helped tremendously in many critical areas and gave us valuable insight into the paper. Without her support and encouragement, it would be difficult for us to complete this study.

We found great interest and co-operation whilst researching this paper. Sincere thanks go to those respondents who willingly devoted their time to help us. Many grateful thanks to our family for unconditional support and encouragement to pursue our project. We are particularly indebted to our lecturers for their encouragement, and generous support throughout this project.

Last but not least, a very deepest gratitude to our entire friend who has involved in sharing the information, bring out their opinion and ideas, also helping us directly and indirectly for this successful report.

Thank you.

## **ABSTRACT:**

This Pest Repeller is designed using the sensor techniques to repel annoying rats and mice in the garden. However, it will not detect if the frequency of the pests is out from the range. So, to increase the effectiveness, the frequency of the ultrasonic oscillator has to be varied automatically using a different IC with different frequency ranging. By combining two proven pest control systems; electromagnetic interference and ultrasonic sound, it provides the most complete and powerful protection available. It only produced a noise to chase all the unwanted pests and can be place in the garden. It is clean (no blood or guts) and re-usable. It is easy to use and does not affect human being also cheaper if compare to the other traps for this all unwanted pests.

# CONTENTS:

<b>Acknowledgement</b>	
<b>List of Table</b>	1
<b>List of Figure</b>	1
<b>Abstract</b>	2
<b>Scope of work</b>	3
-Flow chart of the project	4
-Gant Chart KEU280	5
-Gant Chart KEU380	6
<b>Chapter 1- Introduction</b>	7
- Objectives	7
<b>Chapter 2 –Sensor Techniques</b>	
2.1 Introduction	9
2.2 Ultrasonic Sensor	9
2.3 Operation of Ultrasonic Sensor	10
2.4 Switching Frequency	10
2.5 Different Types of Ultrasonic Sensor	12
2.6 Ultrasonic Applications	13
2.7 Advantage and Disadvantage	14
<b>Chapter 3 –Circuit Design and Operations</b>	
3.1 Introduction	15
3.2 Tina Pro Simulators	

## **SCOPE OF WORK**

To ensure this project work in progress, contacts with advisor are very important in order to have a well done project. Table below elaborate about Gantt chart or work progress that has been done. For KEU 280, we have project selection, browsing information, designing a circuit, learn about circuit, and research the component, drawing the circuit using TINA software, typing and submitting project report.

For KEU 380, we continue our project with hardware constructions as shown in Gantt chart. It consists of PCB layout, lettering, etching, drilling and component mounting, soldering and lastly circuit testing. After the circuit testing, we write for our final project report and finally we have a presentation on our project.