

**UNIVERSITI TEKNOLOGI MARA**

**SMART WINDOW FOR KITCHEN  
WITH IOT SYSTEM**

**MUHAMMAD ADHNIN BIN ATHARI**

**DIPLOMA OF ELECTRICAL ENGINEERING  
(ELECTRONIC)  
Diploma of Electrical Engineering**

**Centre for Electrical Engineering Studies College of  
Engineering**

**Feb 2023**

## ABSTRACT

Nowadays, a lot of individuals choose to prepare meals at home rather than purchasing them from a store. Due to our regular use of the kitchen to prepare meals at the appropriate times, it can be claimed that its use has recently increased. They occasionally fail to turn off the stove gas. When the cooking is finished, the kitchen window is always shut. When the fan detects any gas or smoke coming from the kitchen area, it will force air to flow through the fan. Based on the amount of gas that needed to be detected in the kitchen area, the proposed method was applied in this study. The Smart Window has a sensor that are designde to detect gas or smoke in the kitchen are. If the sensors detect either of these substances, they will trigger the DC motor fan, which will force the gas or smoke to be expelled through the window. At the same time, a small bulb will change from green to red, orange to alert the user to the presence of gas or smoke. In addition to this visual warning, the system will also send a notification to the user's phone or email, alerting them to the presence of gas or smoke in the kitchen, even if they are not in physically in the house at the time. This can be especially useful if the user is away from home and unable to physically check on the kitchen themselves. Overall, this smart window system is designed to keep the user informed and safe by alerting them to the presence of potentially dangerous substances in the kitchen, and taking action to remove those substances from the room. MQ-2 will act as input while DC MOTOR, LED and Nodemcu as output.

## **ACKNOWLEDGEMENT**

Assalamualaikum w.b.t and praised to almighty Allah s.w.t which led me in completing my project for among of my part 5's course, Final year Project II. There is no doubt that I am highly delightful and thankful to my course lecturer, Madam Masmaria binti Abd Majid for mentoring and supervise throughout my project's progresses.

On the other hand, commitment, dedication, ideas delivered by my couse lecturer of Smart Smoke Alarm IoT System are very valuable and yet appreciated. Every idea of my course lecturer in sharing and integrating thoughts and mind in succeeding this innovative and creative project are the main contribution of my progress. Otherwise, failure would be the end of my project.

Nonetheless, I also thanked to my family, my partner under the same supervisor and friends as they have also contributed thoughts for my projects. Without supports from outside of member, lack of ideas would not be encountered.

## TABLE OF CONTENT

	<b>Page</b>
<b>AUTHOR'S DECLARATION</b>	<b>ii</b>
<b>Approval</b>	<b>iv</b>
<b>ABSTRACT</b>	<b>v</b>
<b>ACKNOWLEDGEMENT</b>	<b>vi</b>
<b>TABLE OF CONTENT</b>	<b>vii</b>
<b>LIST OF TABLES</b>	<b>ix</b>
<b>LIST OF FIGURES</b>	Error! Bookmark not defined.
<b>LIST OF SYMBOLS</b>	<b>xii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xiii</b>
<b>CHAPTER 1 INTRODUCTION</b>	<b>1</b>
1.1 Introduction	1
1.2 Background Study	2
1.3 Problem Statement	2
1.4 Objectives	3
1.5 Scope of Study	3
1.6 Project Contribution	5
<b>CHAPTER 2 LITERATURE REVIEW</b>	<b>6</b>
2.1 Introduction	6
2.1.1 IoT Based Automatic Fire Alarm System	6
2.1.2 Fire Detection System using Raspberry Pi	6
2.1.3 Smart Gas Level Monitoring, Booking & Gas Leakage Detector over IoT.	7
2.1.4 An IoT based Real-Time Stress Detection System for Fire-Fighters	8
<b>CHAPTER 3 METHODOLOGY</b>	<b>10</b>
3.1 Introduction	10
3.2 Hardware	10

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The smart alarm for kitchen needs to apply in the kitchen to easy it for install and working by at the certain of area. We will use motor to open the window and we can instal the at the already used window or brand new to upgrade safety to the next level. Smart window will be activated when in the kitchen area had the specific thickness of smoke it will be notified and alert the user family by lightning and through internet for those outside from house. There are still many cases of leakage gas in the moreover at the kitchen area, it can may cause some relevant threat to resident and it surrounding.

Almost all of the explosion happen caused by the undetected leakage. The leakage of gas mostly from the cooking gas, the cooking gas is basicly a butane gas and it hard to sense the gas and it gas is a transparent . It hard to detect with human eyes because of that we need a product that can detect easily and add a motor to have a suction the gas out.

The Internet of Things (IoT) refers to the inetrconnected network of physical devices, vehicles, bilding, and other objects that are embedded with sensors, software, and network connectivity, allowing them to collect and exchange data. The IoT enables these objects to be connected and controlled remotely across existing network infrstructure, creating oppurtunities for more efficient, more accurate, and more timely decision making. The IoT has the potential to transform a wide range of industries, including manufacturin, transportation, healthcare, agriculture, and energy. By ganthering data from a variety of sources, the IoT can provide insigths that can be used to optimize processes, improve efficiencies, and reduce costs.

Smoke alarms are devices that are designed to detect the presence of smoke and alert people to the presence of a fire. They are an important feature in homes, offices, and other buildings, as they can provide early warning of afire and allow people to evacuate before the fire spreads. There are two main types of smoke alarms that are ionization smoke and photoelectric smoke. In most cases, smoke alarms are powered by batteries or by a hardwired electrical connection to the building's power grid. They are equipped with a loud alarm that can be heard through the buiding. Based the function of IoT, it can transfer the alarm through phone and it can easier the process alert the user.