

UNIVERSITI TEKNOLOGI MARA

**A REVIEW: AIR POLLUTANT INDEX IN
SELANGOR FOR YEAR 2014**

MOHAMMAD HAZIQ BIN BADARUDDIN

Thesis submitted in fulfilment of the requirements for the degree of
Bachelor Eng. (Hons) Chemical And Process

Faculty of Chemical Engineering

July 2017

ABSTRACT

The worsening of air quality is parallel with fast urbanization and industrialization in the country. For past two decades, air pollution has become a serious issue in this nation. It is affecting forest species, agricultural crops, ecosystems, and human health. For example, Selangor experiences one of the worst air qualities in Malaysia for every year. The worst ever of haze cases was reported in Malaysia on 1997 since 1980. To improve and increase quality of air in Malaysia, government was established Haze Action Plan, Malaysia Air Quality guidelines, and Air pollution Index in Malaysia (APIMS). Index system for determination ambient air quality and classification was introduced by APIMS. The five air pollutants which are carbon monoxide (CO), ozone (O₃), particulate matter below micron size (PM₁₀), sulphur dioxide (SO₂) and nitrogen oxide (NO₂). Air pollution management can be used through the forecast of air pollution. Hence, the objectives the project to understanding the source of emission of air pollution index in Selangor in 2014. Petaling Jaya is one of the target places in Selangor that experienced worst air quality index. Petaling Jaya is located with mixed commercial residential industrial areas that cause the biggest pollution happen. Plus, the increasing of people also affects the air quality in Malaysia. In addition of these, the addition of university, colleges and schools in Petaling Jaya also important to monitor the air quality. Not only Petaling jaya, Kuala Selangor, Shah Alam, Klang and Banting also area of the target places that important to monitor the air quality.

ACKNOWLEDGEMENT

Firstly, I would like to express our gratitude to Allah for all his blessing that give us patience and made possible to complete this Research Project 2. Greatest appreciation to supervisor Dr Safari Bin Zainal for giving endless help, support, guidance, and advice throughout to complete of this project. Thank for the forbearance and believe in us.

I also want to take this opportunity to give special thanks to Faculty Chemical Engineering especially to all lecturer who teach part 8 students for their support for all final year student to complete the Research Project 2. Next, I would like to express my deepest gratitude toward Air Pollutant Index in Malaysia (APIMS) and Air Division, Department of Environment (DOE) for providing the air monitoring data.

Lastly thank to my family and friend who never tired to support and help in order to complete this thesis. In a nut shell, not forget to all people that directly or indirectly in helping to complete our Research Project 2.

TABLE OF CONTENTS

	Page
AUTHOR’S DECLARATION	vi
SUPERVISOR’S CERTIFICATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENT	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATION	vi
 CHAPTER 1: INTRODUCTION	 1
1.1 DESCRIPTION OF AIR POLLUTANT	1
1.2 TYPES OF AIR POLLUTANT	2
1.2.1 Sulfur Dioxide (SO ₂)	2
1.2.2 Carbon Monoxide (CO)	3
1.2.3 Ozone (O ₃)	4
1.2.4 Nitrogen Oxide (NO ₂)	6
1.2.5 Particulate matter	7
1.3 RECOMMENDED MALAYSIAN AMBIENT AIR QUALITY GUIDELINES	8
1.4 AIR MONITORING STATION IN MALAYSIA	10
1.4.1 Continuous Air Quality Monitoring (CAQM)	10

CHAPTER 1

INTRODUCTION

1.1 DESCRIPTION OF AIR POLLUTANT

Air pollution is worldwide natural issue that impacts for the most part strength of urban populace. The escape of hazardous chemicals can be occurs by accidently to environment. However, the discharged of different activities and mechanical industrial facilities caused various air pollutants and lead to unfriendly impacts on environment and human health. Air pollutant can be defined as any substance that cause damages to animals, material, vegetation or human. Air pollution may contribute or cause to serious disease or death or may show possible hazard to human impacts as long as human are concerned on it. Epidemiological, clinical and animal studies examine the substance whether harmful to human or not. As result, it justify that health impact is connected to the substance or vice versa. Regarding to risk of human health is the likelihood a toxic wellbeing impacts could happen (Marilena Kampa, 2008).