

**A REVIEW: AIR POLLUTANT INDEX IN SELANGOR
FOR YEAR 2012**

NURUL NADIATASHA BT ROSLAN

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**FACULTY OF CHEMICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
SHAH ALAM**

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ABSTRACT

Air pollution becomes one of the major issues in Malaysia but luckily, Malaysia is not in critical level if compared to other countries such as India, China and Indonesia. The Air Pollutant Index (API) is one of the system that established by Department of Environment (DOE) to range the air quality from good to hazard. The aims of this study is to review a trend of air pollutant in atmosphere that involved in Selangor for year 2013 which involved five monitoring stations. To accomplish the study, graph of five parameters of pollutants (SO_2 , NO_2 , CO , O_3 and PM_{10}) were plotted against time. Based on the results, the relationship of pollutant parameter and the factor that contributes to the trend was determined. From the analysis of graph, it was found that the major pollutant in air pollution in Selangor was PM_{10} , followed by CO , O_3 , NO_2 and the lowest concentration were SO_2 . Besides that, it was found that, the most polluted area in Selangor was observed in Klang and Petaling Jaya, followed by Shah Alam, Banting and Kuala Selangor. If compared to MAAQG, level of pollutants does not exceed the standard except for PM_{10} at certain month. This analysis can be used for scientist or planner to further studies and investigate about the relationship between air quality with the meteorological condition and transportation in order to increase the understanding of physical and chemical factor of air quality in Malaysia.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Air pollution becomes one of major issues not only in Malaysia, but also in other countries. In general, air pollution can be defined as the introduction of substances in the form of dust, fume, gas or vapour into the air, which has bad effects to human, plant, animal and properties damaged (AMIR, 2007). From epidemiology and laboratory studies, it demonstrated that ambient air pollutants will contribute to various respiratory problems, including bronchitis, emphysema and asthma (N. A. B. Mabahwi, Leh, & Omar, 2014). Other health diseases that can relate to air pollution are sinusitis and allergy. Approximately 35 million people worldwide have died because of chronic lung diseases, such as asthma, chronic obstructive pulmonary disease since 2005 (Ozcan & Cubukcu, 2015).

The air contaminants or air pollutants that contributed in air pollution were sulphur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂) and particular matter dispersion (PM₁₀). These air pollutants were distributed by wind and geographical factors. For ozone layer, it forms due to hydrocarbon react in the presence of NO and sunlight. SO₂ was produced from fuel combustion, electric utilities and industrial processes. This pollutant can cause aggravates asthma and hard breathing. CO was produced from vehicle's engine fuel combustion. It will aggravate heart disease and reduces oxygen reaching body's organ. O₃ was a secondary pollutant formed by chemical reaction between volatile organic compounds (VOC) and NO_x in the presence of sunlight. It decreased lung function and can cause respiratory