

UNIVERSITI TEKNOLOGI MARA

**EXPOSURE TO PARTICULATE MATTER 2.5 WHILE
COMMUTING IN KTM COMMUTER SENTUL- PORT
KLANG ROUTE, MALAYSIA**

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**Project submitted in fulfilment of the requirements
for the degree of**

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Declaration by Students

Project entitled “Exposure to Particulate Matters 2.5 while commuting in KTM Commuter Sentul – Port Klang Route, Malaysia” is a presentation of my original research work. Wherever contribution of other are involved, every effort is made to indicate this clearly with due reference to the literature and acknowledgment of collaborative research and discussion. This project was done under the guidance of Mr. Megat Azman bin Megat Mokhtar. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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Abstract

EXPOSURE TO PARTICULATE MATTER 2.5 DURING COMMUTING IN KTM COMMUTER SENTUL- PORT KLANG ROUTE, MALAYSIA

Raja Jasmin Suhana bt Raja Zainal Abidin

Particulate matter has been known to cause health impact which is diameters of less than 10 micrometres (PM10) and less than 2.5 micrometres (PM2.5). However, the ambient air is consisting of complex mixture of various particles size. The smallest particles are known as ultrafine particles (UFP) in which the size fraction is less than 100 nanometre (0.1 μ m). The significant health effects of the particulate matter 2.5 (PM2.5) has led to the concern of human on the air emission of vehicles compared to the public awareness on the air quality in the transportation itself. There is many research on the evaluation of pollutant emits by vehicle however, the air quality in the vehicle is ignore particularly in Malaysia. Therefore, the air quality in public transport is important element to be evaluating as people spend time in the commuter as well as, the lack of legislations regarding the indoor air quality for public transport in Malaysia. To identify the exposure concentration of PM2.5, carbon monoxide and carbon dioxide during commuting public transport (KTM commuter) in Kuala Lumpur. The study design is cross-sectional study, and using two types of instrument which are TSI Dust Trak II 8530 and Q-Trak Indoor Air Quality Monitor Model 7575. TSI Dust Trak II 8530 is used to monitor PM2.5 which is able to detect particle size diameter of 2.5 micrometres or less and Q-Trak Indoor Air Quality Monitor Model 7575 is used to monitor the concentration of both carbon dioxide and carbon monoxide in the KTM commuter. UFP concentration while commuting will be comparing based on different background environment and operating period. Based on the findings, the average reading for the overall measurement found that the particulate matter 2.5 are slightly lower than other studies.. It can be related to the influence of ambient air that is contributed from the combustion of motor vehicles, increase of humidity, number of passengers and also environmental pollution. The quality of air inside the train is in an acceptable level. The main source of particles is identified to be from outdoor ambient air.

Keywords: particulate matter 2.5, indoor air quality, public transportation, ambient air