

**UNIVERSITI TEKNOLOGI MARA**

**TOTAL VOLATILE ORGANIC COMPOUNDS (TVOCs)  
ACCORDING TO AGE OF THE BUILDING IN UITM  
PUNCAK ALAM**

**NOR EMILIA BINTI MAHUSIN**

Project submitted in fulfillment of the requirements for  
the degree of  
**Bachelor in Environmental Health and Safety  
(Hons.)**

**Faculty of Health Sciences**

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## DECLARATION BY STUDENT

Project entitled “Total Volatile Organic Compounds (TVOCS) in the Lecture Halls according to Age of the Building in UiTM Puncak Alam” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, En.Razi Ikhwan Bin Md Rashid. 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).

Student’s signature:

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(Nor Emilia Binti Mahusin)

2014600646

950625-03-5270

Date: .....

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## ABSTRACT

Volatile organic compounds (VOCs), major air pollutants in the indoor environment, are easily released into indoor air. Volatile organic compounds (VOCs) are present in the atmosphere mainly as gases, and usually emitted from certain solids or liquids. Poor ventilation, volatile organic compound (VOC), building dampness and mould can be associated with symptoms included the Sick Building Syndrome. This study was done to determine level of TVOCs in educational building according to the ages of building and to determine the symptoms of Sick Building Syndrome (SBS). 5 lecture hall were selected which were AC200, AC300, DK10, DK2, and DK1. Sampling period of Total Volatile Organic Compound (TVOC) level were 0830 am to 0430 pm. The sample had been taken from October 2017 until January 2018. The data had been taken every 15 minutes within 8 hours. Hundred and sixty students were selected consist of 80 students for each building (Faculty of Accountancy and Faculty of Health Sciences). Questionnaire based on Malaysia Industrial Code of Practice on Indoor Air Quality 2010 was used to record symptoms of SBS. The study found that The mean and standard deviation of TVOCs concentration in new building was 0.145 ppm and 0.085 ppm, whereas TVOCs generated in the old building lower compared to new which is 0.13644 ppm but standard deviation of TVOCs concentration in old building is slightly higher which is 0.151ppm. The level of TVOCs in the old building and the new building show the TVOCs concentration is comply with the standard. Furthermore, headache, fatigue, drowsiness, dizziness and dry throat symptoms were 25%, 18%, 62.5%, 28%, and 21% respectively. It was result of Faculty of Accountancy. Moreover, headache, fatigue, drowsiness, dizziness and dry throat symptoms were 20%, 13.7%, 57.5%, 28%, and 18% respectively. It was result for Faculty of Health Sciences. In conclusion, high level of TVOCs in the educational building can be risk factor for SBS symptoms. Thus, this study can be used to formulate strategies to overcome the issues.

Keywords: Volatile Organic Compound, Sick Building Syndrome, indoor air.