

**UNIVERSITI TEKNOLOGI MARA**

**CONCENTRATION OF PARTICULATE MATTER  
(PM<sub>10</sub> AND PM<sub>2.5</sub>) IN A SELECTED WOOD  
FURNITURE MANUFACTURING INDUSTRY  
AND HEALTH RISK ASSESSMENT**

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

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## DECLARATION BY STUDENT

I declare that the work in this project draft is my original work. I, hereby, acknowledged that I have complied with the Academic Rules and Regulations for Post Graduate Research, Universiti Teknologi Mara, Puncak Alam Campus, throughout conducting the conduct of my study and research.

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*In the name of Allah, The MOST gracious, The Most Merciful*

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## ABSTRACT

Wood furniture manufacturing industry involving many process from the raw material until the process of furniture are complete and one of the process in wood furniture manufacturing industry is sanding section. This study was conducted in small medium industry that produces wood furniture manufacturing which is located in Batu Pahat, Johor. This study was performed in order to measure the concentration of particulate matter of  $PM_{10}$  and  $PM_{2.5}$  and Health Risk Assessment in wooden furniture manufacturing. One location are selected in the process of making furniture which is sanding. Hence, the concentration levels of  $PM_{10}$  and  $PM_{2.5}$  are compared and to assess the potential health risk effects from exposure through inhalation by estimating health risk assessment. The particulate matter are measured using EVM-7 for  $PM_{10}$  and using Dust-Trak for  $PM_{2.5}$ . The results obtain that the level of mean concentration of  $PM_{10}$  are higher than  $PM_{2.5}$ . The  $p$ -value for both particulate matter are less than 0.05 it is showed that both particulate matter had significantly different. Meanwhile, for non-carcinogenic health risk of particulate matter estimated that hazard quotient and hazard index in a safe limit which is in moderate range. Hence, the control of dust emission and use of personal protective equipment must be enforced in this wood furniture manufacturing to ensure health and safety workers so that wood dust exposure towards worker can be reduced.

Keywords: *Particulate matter, Health Risk Assessment, wood furniture manufacturing*