DETERMINATION OF HEAVY METALS IN DUST FROM DIFFERENT LEVEL OF STUDENTS' RESIDENTIAL BUILDING

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Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Chemistry
In the Faculty of Applied Sciences
University Teknologi MARA

JANUARY 2019

ABSTRACT

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Most students spend their time doing indoor activities. Indoor air pollutants might affect the student's health. The objectives of the study are to determine the concentration of heavy metals in indoor dust from different level of students' residential building and to estimate the potential health risk by using health risk assessment (HRA). The dust samples was collected at three different level of a students' residential building which are level 1, level 4 and level 10. The selected heavy metals studied were lead (Pb), copper (Cu), iron (Fe) and cadmium (Cd). The samples were analyzed by using Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES).The highest concentration of heavy metals is Fe with 1.60 to 3.10 μgg^{-1}, followed by Cu with 0.64 to 1.00 μgg^{-1}, Pb with 0.06 to 0.09 μgg^{-1} and 0.04 μgg^{-1} to 0.06 μgg^{-1} for Cd. The overall concentrations of heavy metal were in order of Fe > Cu > Pb > Cd. The results showed that low potential health risks were determined from metal exposure in indoor dust. Moreover, through the survey assessment, most of student does not have any respiratory diseases (87%) although 63% of respondents claimed they were allergic to dust. The accumulation of these heavy metals in different level at students' residential may be influenced by the wind blowing from outdoor environment as well as the distance of level from main sources of heavy metal.

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