INDOOR DUST COMPOSITION FROM SELECTED LABORATRORY IN UNIVERSITI TEKNOLOGI MARA (UiTM) CAWANGAN PAHANG

MUHAMMAD ALIF BIN SURATMIN

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ABSTRACT

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Most student spends their time in the laboratory to conduct experiment which has been established in their syllabus of study. Unknowingly, high concentrations of indoor pollutants in the laboratory might affect the students' health and performance. The aims of this study are to determine the concentration of selected heavy metals in indoor dust from the selected laboratory in UiTM Cawangan Pahang and to identify the potential source of heavy metal in indoor dust samples whether natural or anthropogenic. The dust sample was collected from Makmal Kimia 3 (MKK 3) Makmal Fizik 4 (MKF 4) and Makmal Biologi 1 (MKB 1) based on the frequency of the location occupied by student and ventilation system. The selected heavy metals studied are aluminium (Al), cadmium (Cd), copper (Cu) and lead (Pb). The dust samples were analyzed by using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES). The highest concentrations of the heavy metals is Al with (5.067 μgg^{-1}), followed by Cu with 1.269 μgg^{-1} , 0.538 μgg^{-1} , 0.030 μgg^{-1} for Pb and Cd respectively. The overall concentrations of heavy metals were found to be in order of Al > Cu > Pb > Cd. The enrichment factor (EF) calculation indicated that the heavy metal determined in indoor dust was influenced by natural (soil) and anthropogenic sources. Pb was found to have the highest enrichment in indoor dust collected from MKF 4 which may be contributed by indoor material and vehicle emission. It is recommended that a wide range and variety of heavy metal in indoor dust should be studied in the future.

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