

**PRELIMINARY ASSESSMENT OF SELECTED HEAVY METALS
IN INDOOR DUST IN UNIVERSITI TEKNOLOGI MARA (UiTM)
PAHANG**

NAQIATUL INTAN FARHAIN BINTI BAKRI

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TABLE OF CONTENT

	Page
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1 INTRODUCTION	
1.1 Background of study	1
1.2 Problem statement	2
1.3 Significance of study	3
1.4 Objectives of study	4
1.5 Scope and limitation of study	4
CHAPTER 2 LITERATURE REVIEW	
2.1 Air pollution	6
2.1.1 Indoor air pollution	7
2.2 Indoor air quality	8
2.2.1 Traffic	9
2.2.2 Industries	9
2.2.3 Indoor material	10
2.3 Heavy metals	10
2.4 Effect to health due to heavy metal contamination	13
2.4.1 Zinc (Zn)	15
2.4.2 Copper (Cu)	15
2.4.3 Iron (Fe)	15
CHAPTER 3 METHODOLOGY	
3.1 Materials	16
3.2 Study location	16
3.3 Sampling location and sample collection	17
3.4 Sample preparation and analysis	18
3.5 Flame Atomic Absorption Spectrometer (F-AAS)	21
3.6 Standard preparation	22
3.7 Enrichment factor	24

3.8	Quality control	26
3.9	Statistical analysis	26

CHAPTER 4 RESULTS AND DISCUSSION

4.1	Calibration curve	27
4.2	Heavy metals concentration	28
4.3	Enrichment factor (EF)	35
4.4	Correlation coefficient analysis	38

CHAPTER 5 CONCLUSION AND RECOMMENDATION

CITED REFERENCES	41
<i>CURRICULUM VITAE</i>	46

ABSTRACT

PRELIMINARY ASSESSMENT OF SELECTED HEAVY METAL IN INDOOR DUST IN UNIVERSITI TEKNOLOGI MARA (UiTM) PAHANG

Most people spend their time doing indoor activities. Unknowingly, high concentrations of indoor pollutants might affect the occupants' health. The aims of this study are to assess the composition of selected heavy metals in indoor dust samples collected from selected locations in UiTM Pahang and to identify the possible source of the selected heavy metals in the indoor dust samples whether natural or anthropogenic. The dust sample was collected in classroom at Block Cendana (C1-03), Makmal Kimia 1 (MK 1) and hostel room in Kolej Mat Kilau based on the frequency of the rooms to be occupied by students. The selected heavy metals studied are iron (Fe), zinc (Zinc) and copper (Cu). After digestion using HNO_3 and HClO_4 , the samples were analyzed by using PerkinElmer Flame Atomic Absorption Spectrometer (F-AAS). The highest concentration of the selected heavy metals is dominated by Fe with $37591.78 \pm 174.71 \mu\text{g g}^{-1}$, followed by Zn with $23473.50 \pm 447.06 \mu\text{g g}^{-1}$, and Cu with $142.84 \pm 3.95 \mu\text{g g}^{-1}$. The overall concentration of heavy metal were found to be arranged in order of $\text{Fe} > \text{Zn} > \text{Cu}$. The enrichment factor (EF) calculated showed that the heavy metals determined in indoor dust were contributed by natural (soil) sources. Zn was found to have the highest enrichment value in indoor dust collected from Makmal Kimia 1. The accumulation of these inorganic substances in indoor dust may be contributed from road dust and automobile emission that has polluted the soil. It can be transported into indoor environment by wind blowing and through improper ventilation. It is recommended that a wide range of heavy metals and more sampling sites should be studied and a proper monitoring program should be implemented.