ANALYSIS OF SELECTED TRACE METALS IN WATER USING DIFFERENTIAL PULSE POLAROGRAPHY AND ANODIC STRIPPING VOLTAMMETRY

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2001

Acknowledgement

It is impossible to acknowledge individually everyone who has contributed in the project. However, I would like to take this opportunity to thank several people.

First and foremost, I feel lucky and please to have Professor Dr. Tan Guan Huat as the project supervisor. He has provided me brilliant ideas and suggestions to develop this project. He is always there to guide and spend time discussing the project with me in college no matter how busy he is. His endless endurance, patience in guiding and beneficial advice is deeply appreciated.

Secondly, I wish to thank to all the laboratory assistants in the analytical laboratory and staffs in the Chemistry Department. All of them have helped me a lot in my project. If not, I won't be able to complete my project.

I also wish to express my warmest regard to my coursemates who helped me in the laboratory when handling the experiment, especially Sim Ley Yee.

Finally, I would like to thank my father, mother, brother, and sister for their love, encouragement, support and patient.

ABSTRACT

In this project, two types of the electroanalytical methods have been studied, which are the Differential Pulse Polarography (DPP) and Differential Pulse Stripping Voltammetry (DPSV). The DPP mode is used to identify the half-wave potential for the metals, including the lead, cadmium, and zinc. The DPP mode is also used to determine the detection limits for the lead, cadmium, and zinc. Meanwhile, the DPSV mode is used to identify the half-wave potential for the metals. The optimum conditions for the DPSV has to be determined, in order to be used to determine the concentrations of the lead, cadmium, and zinc in Sungai Penchala. The DPSV mode is also used to determine the detection limits for the metals. The concentrations for the metals are obtained by the external calibration method. The project is stressed on the linear relationship between the peak current and the concentrations, optimum conditions for the DPSV, and the detection limits for the DPP mode and DPSV mode.

This project is divided into the several chapters:

- Chapter 1: Introduction
- Chapter 2: Objective
- Chapter 3: Methodology
- Chapter 4: Experimental
- Chapter 5: Results and Discussion
- Chapter 6: Conclusion

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LIST OF SYMBOL/ABBREVIATION

L	Litre
mL	Mililitre
µL	Microlitre
g	Gram
kg	Kilograam
mg	Miligram
µg	Microgram
ng	Nanogram
ppm	Parts per million
ppb	Parts per billion
rpm	Round per minute
M	Molar
cm^3	Centimeter cube
°C	Degree Celsius
C	Coulomb
A	Ampere
V	Volt
mV	Milivolt
s	Second
ms	Milisecond
Hz	Hertz

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