

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

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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
$^{\circ}\text{C}$	Degree Celsius
C	Coulomb
A	Ampere
V	Volt
mV	Milivolt
s	Second
ms	Milisecond
Hz	Hertz

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