

**INFLUENCE OF MAGNETIC STIRRING AND  
ELECTROLYTE CONCENTRATION IN  
BATCH ELECTROCOAGULATION FOR  
REMOVAL OF COLOUR AND SUSPENDED  
SOLIDS IN LEACHATE**

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**BACHELOR OF CHEMICAL ENGINEERING  
(ENVIRONMENT) WITH HONOURS**

**UNIVERSITI TEKNOLOGI MARA**

**2022**

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ELECTROCOAGULATION FOR REMOVAL OF COLOUR  
AND SUSPENDED SOLIDS IN LEACHATE**

By

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This report is submitted in partial fulfillment of the requirements  
needed for the award of  
**Bachelor of Chemical Engineering (Environment) with Honours**

**CENTRE FOR CHEMICAL ENGINEERING STUDIES  
UNIVERSITI TEKNOLOGI MARA**

**AUGUST 2022**

## **ACKNOWLEDGEMENT**

Firstly, I wish to thank God for giving me the opportunity to embark on my research and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Ir. Dr. Noorzalila binti Muhammad Niza.

My appreciation goes to staff of Padang Cina Sanitary Landfill, Kulim who provided the facilities and assistance during sampling. Special thanks to my colleagues and friends for helping me with this project.

Finally, this thesis is dedicated to the loving memory of my very dear father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah and thank you.

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## ABSTRACT

Generation of leachate landfill which carries heavy metals and other matters as well as unpleasant smell had been dangerously increasing over the years. To overcome this problem, treatment of leachate landfill needs to be performed. Aside from conventional method, coagulation-flocculation treatment, there is advanced method can be performed, which is electrocoagulation as effective removal of pollutants in the leachate landfill. The objective of this research is to determine the percentage removal of colour concentration and suspended solids present in the leachate sample from Padang Cina Sanitary Landfill (PCSL), Kulim by performing electrocoagulation method by focusing on the influence of magnetic stirring and the electrolyte concentration. The sample will be characterised in terms of temperature, pH, COD, turbidity, colour, and suspended solids. Then the sample will be treated in the electrocoagulation batch reactor model to carry out the research objectives. Evidently, at stirring rate of 200rpm and electrolyte concentration has the highest percentage removal of color and suspended solids which are 92.579% and 96.685%, respectively. Kinetic model was performed and the first-order of reaction rate fit for removal of suspended solids with the  $R^2$  value 0.9433. Meanwhile, for removal of color concentration showed the second-order reaction rate model fit the best with  $R^2$  value is 0.9205 with rate constant of  $-0.000152 \text{ L.mg}^{-1}\text{min}^{-1}$ .