ENHANCEMENT OF CORROSION INHIBITION EFFICIENCY OF SUS304 IN ACIDIC COCONUT HUSK EXTRACT IN THE PRESENCE OF HALIDE ION

NUR IZZATUL AZWANI BINTI SHARIFFUDDIN

BACHELOR OF SCIENCE (Hons.)
APPLIED CHEMISTRY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA

AUGUST 2024

UNIVERSITI TEKNOLOGI MARA | Fakulti Sains Gunaan

SUBMISSION FOR EVALUATION

FINAL YEAR PROJECT 2 - RESEARCH PROJECT

ENHANCEMENT OF CORROSION INHIBITION EFFICIENCY OF SUS304 IN ACIDIC COCONUT HUSK EXTRACT IN THE PRESENCE OF HALIDE ION

Name	:	NUR IZZATUL AZWANI BINTI SHARIFFUDDIN
Student ID	:	2022913081
Program	:	AS245
Course code	:	FSG671
Mobile Phone	:	
E-mail	:	2022913081@student.uitm.edu.my

** Please attach the Turnitin summary report, with your name clearly stated, at the end of your report and submit it together.*

Approval by Main Supervisor :

I certify that the work conducted by the above student is completed and approve this report to be submitted for evaluation.

Supervisor's name	:	DR SOLHAN BINTI YAHYA
Date	:	26 JULY 2024
Turnitin Similarity %	:	28%
Signature	:	

ENHANCEMENT OF CORROSION INHIBITION EFFICIENCY OF SUS304 IN ACIDIC COCONUT HUSK EXTRACT IN THE PRESENCE OF HALIDE ION

NUR IZZATUL AZWANI BINTI SHARIFFUDDIN

Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Applied Chemistry
in the Faculty of Applied Sciences
Universiti Teknologi MARA

AUGUST 2024

TABLE OF CONTENTS

ABSTRACT

ENHANCEMENT OF CORROSION INHIBITION EFFICIENCY OF SUS304 IN ACIDIC COCONUT HUSK EXTRACT IN THE PRESENCE OF HALIDE ION

Corrosion is the consequence of unprotected stainless-steel exposure to a corrosive medium, resulting in uncontrolled chemical reactions that cause degradation. In this research, coconut husk as plant extract was investigated to inhibit corrosion of SUS304 in hydrochloric acid solution with the presence of halide ion by weight loss method. The coconut husk extract (CHE) contains phytochemical compounds such as lignin that can inhibit and reduce the corrosion effect. Moreover, the coconut husk possessed functional groups such as O-H, C-H, C=O, C=C and others that been identified via FTIR analysis. The results indicated that the inhibitory impact followed the sequence Cl^-< Br^-<I^-. Furthermore, 1.5 g/L CHE with I^- inhibitor exhibited excellent corrosion inhibition efficiency, 97.89%. Optical analysis showed the corrosive effect on stainless steel surface was reduced due to the use of halides in the corrosion inhibitors. This research proved that the addition of halide enhanced the CHE as an environmentally beneficial corrosion inhibitor which has the potential to be used in industrial applications.