

INHIBITION OF CORROSION ON MILD STEEL IN SEAWATER
BY HIGH CONCENTRATION OF
CIPOLLA EXTRACT

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DECLARATION

It is hereby declared and verified that this research report entitled:
INHIBITION OF CORROSION ON MILD STEEL IN SEAWATER BY HIGH CONCENTRATION OF *CIPOLLA* EXTRACT By **NOOR SHAHAZAMILLA BINTI HAMIDAN** Matric No. **UK 17407** have been examined and all errors identified have been corrected. This report is submitted to the Department of Maritime Technology as partial fulfillment towards obtaining the **Bachelor Degree of Applied Science (Maritime Technology)**, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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VERIFICATION

I hereby declare that this thesis **INHIBITION OF CORROSION ON MILD STEEL IN SEAWATER BY HIGH CONCENTRATION OF *CIPOLLA* EXTRACT** is the result of my own research except as cited in the references.

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**KAJIAN PERENCAT KAKISAN SEMULAJADI PADA KELULI LEMBUT DI
DALAM LARUTAN EKSTRAK *CIPOLLA* PADA KEPEKATAN YANG
TINGGI**

ABSTRAK

Ekstrak *cipolla*(bawang) dikaji dengan kepekatan yang tinggi (1000ppm, 3000ppm and 5000ppm) sebagai perencat kakisan keluli lembut dengan menggunakan teknik rendaman pada larutan yang berbeza kemasinan. Keluli lembut di analisis dengan dua kaedah; kaedah pertama pengiraan kehilangan berat keluli dan kaedah kedua ialah EIS. Keluli direndam selama 40 hari dan di analisis di setiap 10 hari. Data yang telah di analisis akan digambarkan kedalam bentuk graf. Kajian ini menemukan kecekapan perencat kakisan adalah tinggi selaras dengan kepekatan *cipolla*. Kecekapan perencat kakisan juga tinggi selaras dengan larutan yang ditukar setiap 10 hari.

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ABSTACT

In this study, the inhibitory action of *cipolla* (red onion) on the corrosion of mild steels has been investigated at three different concentrations (1000ppm, 3000ppm and 5000ppm) using weight loss method and EIS. The inhibition of the corrosion on mild steel by *cipolla* (onion) extract in seawater solutions will study using immersion technique. Mild steel plates tested using different concentration of *cipolla* extraction and immersed for 40 days. Mild steel tested using two different methods; first method is the weight loss method. This method calculated by using mathematical equation to determine which plate is more corrode. This research found that the inhibition efficiency increased with the increased of the extract concentrations in different salinity of seawater. *Cipolla* (onion) extraction serves as an effective and non-toxic inhibitor of the corrosion on mild steel. The active component in onion is *quercetin* , it can be said that is high concentration of *Cipolla* inhibitor show the maintain value of inhibition efficiency with time. High value of inhibition efficiency shown due the changed of inhibitor solution each 10 days intervals. The value of corrosion rate was shown positively for mild steel with inhibitor compare to the plates without the inhibitor.