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**EFFECT OF TEMPERATURE ON CORROSION INHIBITION OF STEEL BY
GLYCINE AND SOYBEAN IN HYDROCHLORIC ACID**

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This Final Year Project Report entitled “**Effect of Temperature on Corrosion Inhibition of Steel by Glycine and Soybean**” was submitted by Nurul Hayani Binti Ramlan in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry in the Faculty of Applied Sciences and was approved by

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ABSTRACT

EFFECT OF TEMPERATURE ON CORROSION INHIBITION OF STEEL BY GLYCINE AND SOYBEAN IN HYDROCHLORIC ACID

This study was done to reduce corrosion on metal surface in acidic condition. Soybean and glycine are known to be good organic corrosion inhibitor in acidic condition. This due to the presence of amino acid in both glycine and soybean. In this study soybean and glycine was study at difference temperature which is 30-60 °C. Due to the desorption and rapid etching of inhibitors at higher temperature, difference concentration of glycine and soybean was study to determine the optimum concentration of inhibitors. Immersion test and study of adsorption method was used to calculated corrosion rate and inhibitors efficiency and to determine type of adsorption of molecule of the metal surface. FTIR and HPLC was conducted to confirm the presence of amino acid in both glycine and soybean. Result obtained for glycine, inhibitors efficiency increases with the increase of concentration of inhibitors but decrease when temperature increase. As for soybean inhibitors efficiency increase with increasing both concentration and temperature. The optimum concentration for glycine is at 2.5 g/L with temperature 30 °C which it has 78% of inhibition efficiency. As for soybean optimum concentration is at 2.0 g/L with temperature 50 °C that has inhibition efficiency 93%. Both soybean and glycine are suggested to follow Langmuir isotherm and the type of adsorption is suggested to be chemisorption. As a result, it is possible to conclude that inhibition by using organic inhibitor of soybean and glycine to prevent corrosion was a success.

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