

**INVESTIGATION OF SCHIFF BASES AS CORROSION
INHIBITORS FOR MILD STEEL IN 1M SULFURIC ACID MEDIA**

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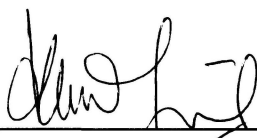
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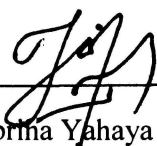
This Final Year Project report entitled **“Investigation of Schiff Bases as Corrosion Inhibitor for Mild Steel in 1M Sulfuric Acid Media”** was submitted by Indra bin Totoh, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by:



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ABSTRACT

INVESTIGATION OF SCHIFF BASES AS CORROSION INHIBITORS FOR MILD STEEL IN 1M SULFURIC ACID MEDIA

Three Schiff base compounds, {[(1E)-(4-chlorophenyl)methylene]amino}phenol (Cben-ap), 2-[2-hydroxybenzylidene)amino]phenol (Sal-ap) and 2-{(E)-[(4-anilinophenyl)-imino]methyl}phenol (Sal-NPD) have been synthesized by the condensation of appropriate aldehydes and amines. Cben-ap is a light green crystal with 55 % yield, Sal-ap is an orange crystal with 78 % yield, Sal-NPD is a dark green crystal with 72 % yield. The structure of the Schiff bases are investigated using elemental analysis, IR spectroscopy, NMR spectroscopy and melting point determination. Results obtained from elemental analysis are closely matched the theoretical/literature values. These indicate that the intended products of Cben-ap, Sal-ap and Sal-NPD have been successfully obtained. The $\nu(\text{C}=\text{N})$ peaks are assigned at 1625, 1631 and 1619 cm^{-1} , respectively. The inhibiting action of these Schiff bases toward the corrosion of mild steel in 1 M H_2SO_4 solution has been studied using the weight loss method, with inhibitor concentrations of 1×10^{-5} to 1×10^{-2} M for a 7 day exposure. It is found that the inhibition efficiency increases with increasing inhibitor concentration, with Cben-ap exhibited the highest corrosion inhibition property of 92.29% at 1×10^{-3} M, followed by Sal-ap which exhibited the second highest corrosion inhibition of 90.39% at 1×10^{-2} M and Sal-NPD around 82.00 % at 1×10^{-4} M.