

The Inhibitory Effect and Adsorption Mechanism of Roasted *Elaeis guineensis* as Green Inhibitor on the Corrosion Process of Extruded AA6063 Al-Mg-Si Alloy in Simulated Solution

- [Authors](#)
- [Authors and affiliations](#)

- O. S. I. Fayomi [Email author](#)
- A. P. I. Popoola

- O. S. I. Fayomi
 - 1
 - 2

[Email author](#)

- A. P. I. Popoola
 - 1
1. 1.Department of Chemical, Metallurgical and Materials EngineeringTshwane University of TechnologyPretoriaSouth Africa
 2. 2.Department of Mechanical EngineeringCovenant UniversityOtaNigeria

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Abstract

The green roasted *Elaeis guineensis* oil was tested as a natural inhibitor for Al-Mg-Si in simulated 3.5 % sodium chloride solution by linear potentiodynamic polarization and gravimetric method in the inhibited concentration variation between 5 % and 15 %. SEM/EDX studies were used to examine the surface morphology of the corrosion process and adsorption corrosion product that retards the degradation activities. From the experimental result, the adsorption of surface active compounds at the metal surface proved to create an organic protective film leading to efficient corrosion inhibition. The inhibitory

effect significantly improved with about 98 % efficiency and the adsorption of *Elaeis guineensis* surfactants extract was found to follow the Langmuir adsorption isotherm.

Keywords

Adsorption Extruded aluminium alloy *Elaeis guineensis* Inhibitory efficiency