

9th Global Chemistry Congress

July 23-24, 2018 | Lisbon, Portugal

Concentration, temperature and kinetic studies of *Kola nitida* leave extract in corrosion prevention



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Biography

Oluwafemi Lawrence Adebayo has completed his MSc in Chemistry from Adekunle Ajasin University Akungba Akoko (2014), Ondo State, Nigeria. He is currently pursuing his PhD in Chemistry at Federal University of Technology Akure, Ondo State, Nigeria. He is currently working as a Lecturer in the Department of Chemistry, College of Education Ikere, Ekiti State, Nigeria. He has published 16 papers in reputed journals and is a Member of International Academy of Science and Engineering Development (IASSED) with membership No: 51050165.

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Weight loss test method was used to study the inhibition and adsorption properties of *Kola nitida* leaves extract addition on corrosion inhibition efficiency of mild steel in 2M HCl solution for various concentration, exposure time and working temperature. The results showed that ethanolic extract of *Kola nitida* leaves is a potential inhibitor for the corrosion of mild steel in acidic medium. The corrosion rate of mild steel in 2M HCl decreases with increasing in the concentration of the extract. The inhibition efficiency increases progressively as the concentration of the extract increases but decreases with rise in temperature and exposure time. The highest inhibition efficiency observed in the presence of the extract was 88.51%. The kinetics of the reaction in the presence of the extracts revealed that it follows a first order reaction and the half-life increases as the concentration of the extract increases. Adsorption studies revealed that Langmuir adsorption isotherm is the best adsorption model applicable to the adsorption of the extract on mild steel surface.

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