



SDI Review Form 1.6

PART 1:

Journal Name:	<u>International Research Journal of Pure and Applied Chemistry</u>
Manuscript Number:	2013_IRJPAC_4524
Title of the Manuscript:	Adsorption and corrosion inhibitive properties of novel surfactants in the series of fatty acids based on palm oil on carbon steel in CO₂-containing solution
Type of the Article	Research paper

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	The manuscript number: 2013_IRJPAC_4524 need a minor revision comments as listed below : - Line 72: Correct structures of the compounds cited according to table 2. - Paragraph 3.1. Line 138: about Figure 1, you only interpret the change in corrosion rate without inhibitor, you must supplement the interpretation even for the case in the presence of inhibitor. - Paragraph 3.1: The authors have interpreted the best efficiencies achieved by the compounds IV and V for two reasons: I- line 176 and II- line 178. The second reason is to eliminate because the surfactans studied have the same alkyl chains. - Line 291: under cathodic control [?]. put a reference to the end. - Based on the obtained curves in Figure 3, it is preferable to	✓ the structures of compounds was corrected. ✓ the interpret the change in corrosion rate in the presence of inhibitor was done. ✓ the second reason was deleted. ✓ the reference was cited.



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	reproduce the figure 4 (Potentiodynamic curves) stabilizing the corrosion potential on the bearing of variation, that is to say, after 3 hours of immersion. - Line 332: The donor group which exists in the compounds IV and V, and not in the other compounds is oxygen but not nitrogen. So the authors have to change: such as nitrogen by such as oxygen. - Paragraph 3.4. line 354: why the authors have used the product II instead of the product V which is better inhibitor. - change the quality of Figure 6 (a) and set the magnification scales on figures 6 (b) and 7 (b). - To better understand the mechanism of action of these inhibitors, in perspective The study can be completed by the impedance measurements (EIS). and establish the equivalent circuit corresponding to the interface carbon steel/1% NaCl solution-CO₂. - line 344: The electron pairs present on the N and O are Sp³ but not Sp².	√ Steady state of open circuit corrosion potential (E_{corr}) for the investigated electrode in the absence and presence of the studied inhibitor was attained after 60 min from the moment of immersion, because at this time the corrosion potential got stable. √ The word nitrogen was replaced by oxygen in the revised manuscript. √ we take inhibitor II as example √ the images was replaced and High resolution is used for improvement micrograph (see Figs. 6 and 7) √ the electrochemical impedance spectroscopy was studied and will be published in another work as part II. √ Sp² was replaced by Sp³.
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<u>Optional/General</u> comments	The manuscript number: 2013_IRJPAC_4524 contains interesting information's about corrosion inhibition using surfactants compounds, Especially a fatty acids based on oil palm. This study was conducted using several electrochemical techniques Such as LPR method, potentiodynamic polarization measurements and EDRF surface analysis technique. The six compounds studied show a good protective action of carbon steel surface and act as mixed-type inhibitor in 1% NaCl containing CO₂. The inhibition follows Langmuir isotherm. The mechanism of these compounds is typical chemisorption at the studied temperature. The EDRF technique confirms the protective action of these surfactants.	
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