



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.



SDI Review Form 1.6

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	The paper entitled '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' represents an interesting paper and I would recommend publications after the author have chance to address the following concerns: Page 11 Surface characterization Fig 6b and 7b are too small; especially Fig. 7b shows absolutely nothing. There are no data of the magnification and it is really hard to believe why the pictures are so small. It looks like a small detail which is magnifying too much and from this reason the resolution of the Fig. 7b is so bad. Figure 7b must be replaced with better snap (image). Authors said that chemisorption process had occurred. If this is true, then peaks of chemical elements, which inhibitor contains in its structure and which are reacted with metal should appear on the Fig. 7a. Otherwise we are talking about the physical adsorption. A hydrophobic part of the inhibitor represents a protective barrier between the corrosion medium and the metal surface, while the chemical reaction between the inhibitor and the metal does not occur.	√ the images was replaced and High resolution is used for improvement micrograph (see Figs. 6 and 7) √ the data in Fig. 7a in the presence of 100 ppm of inhibitor II show additional peak characteristic of K element, and the lower peaks height of Fe than those observed in the absence of inhibitors. Indicating that, adsorption of inhibitor molecule on the electrode surface. These results also were confirmed by FT-IR. The data for inhibitor I (SS) showed that, S=O stretching frequency drops from the level of 1355 cm⁻¹ to the level of 1320 cm⁻¹. This suggests that electron cloud of S=O is shifted from S=O up to



SDI Review Form 1.6

	I propose to extend the experimental work. The electrochemical impedance spectroscopy (EIS) is particularly the most useful or the most appropriate method for the characterization of the adsorbed protective layer. This means quality of the protective layer, its homogeneity or porosity, etc. Therefore I recommend additionally electrochemical impedance spectroscopy.	Fe+2 resulting in formation of Fe^{+2} –SS complex on metal surface. This data was included in the revised manuscript (see page 10) ✓ the electrochemical impedance spectroscopy was studied and will be published in another work as part II. .
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		