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SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Asian Journal of Applied Chemistry Research
Manuscript Number:	**Ms_AJACR_42725**
Title of the Manuscript:	**Inhibition of Mild Steel Corrosion in Acidic Medium by Telfairia occidentalis Rind Extract**
Type of Article:	**Original Research Article**

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	**Authors' response to final evaluator's comments**
Corrosion rate expressed in mmy^{-1} was calculated from weight loss measurements and percentage of inhibition efficiency was calculated from the corrosion rate values. Equations 1 and 2 establish the relation between rate of corrosion and inhibition efficiency with the weight loss of metal specimens. $\text{Rate of corrosion } W = \frac{K \times \text{wt loss in grams}}{\text{Area in sq.cm} \times \text{Time in Hrs} \times \text{Density}}$ (1) Where 'K' =87600 (This is a factor used to convert cm/hour into mm/year), density of MS specimen= 7.88g/cc Percentage of inhibition or the inhibition efficiency (η) is given by $\eta = \frac{W - W'}{W} \times 100$ (2) where W & W' are the corrosion rates of the metal specimen in the absence and presence of the inhibitor respectively. In the first review comment, since the corrosion rates are expressed in mmy^{-1}, the constants K and density compulsorily taken for calculation. In that sense the equation for corrosion rate is correct. (The constants are not included in the equation). If all the coupons have same dimensions, the inhibition efficiency can be calculated form weight loss studies. In that sense authors are **correct.** **Authors Comment:** The extract, being in paste form, can be weighed to prepare the extract concentrations in g/L, which is mass concentration. The concentrations are not given in moles/L, which is molar concentration, since the molar mass of the extract is not known. For plotting the adsorption isotherm the concentration expressed in g/L. Then how ΔG^{o}_{ads} value expressed in kJ mol^{-1} ? (Molar mass of the extract is not known). Clarify.	The unit of ΔG^{o}_{ads} expressed in kJ mol^{-1} in the manuscript is correct. Linearization of eqn (11) gives: $\Delta G^{o}_{ads} = -RT \ln(55.5\ K_{ads})$ The unit of ΔG^{o}_{ads} being in **kJ mol^{-1}** was obtained by multiplying the R value (**i.e. 8.314 JK^{-1} mol^{-1}**) by the parameters on the left hand side of the equation above. It is not because the extract concentration was in mol/L. Using extract concentration of C(g/L), the unit of ΔG^{o}_{ads} is reported in **kJ mol^{-1}** in literature. The reviewer can see the following articles: 1) Umoren SA, Obot IB, Ebenso EE, Okafor PC (2008). Eco-friendly inhibitors from naturally occurring exudate gums for aluminium corrosion inhibition in acidic medium. Portugaliae Electrochimica Acta, 26: 267 – 282. 2) Cang H, Fei Z, Shao J, Shi W, Xu Q (2013). Corrosion inhibition of mild steel by aloes extract in HCl solution medium. Int. J. Electrochem. Sci., 8: 720 – 734. 3) Okafor PC, Ekpe UJ, Ebenso EE, Oguzie EE, Umo NS, Etor AR (2006). Extract of of Allium cepa and Allium sativum as corrosion inhibitors of mild steel in HCl solution. Transactions of the SAEST, 41: 82-87.

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