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| Journal Name: | **Asian Journal of Applied Chemistry Research** |
| Manuscript Number: | **Ms\_AJACR\_122643** |
| Title of the Manuscript: | **Corrosion Inhibition of Aluminum and Copper in Hydrochloric Acid Solutions using Extracts of Almond Leaves (Terminalia Catappa) Leaves (TCE).** |
| Type of the Article |  |

**PART 1: Review Comments**

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| **Compulsory** REVISION comments | **Reviewer’s comment** | **Author’s Feedback** *(Please correct the manuscript and highlight that part*  *in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. Why**  **do you like (or dislike) this manuscript? A minimum of**  **3-4 sentences may be required for this part.** | **Copper and Aluminum are widely used metals for industry infraestructure, therefore the study of new methods to prevent and control corrosion under operating conditions is very important. The paper**  **investigates the use of a plant extract as an organic eco-friendly corrosion inhibitor, current tendencies in**  **corrosion research are in line with the work presented in the manuscript and therefore is relevant in the current context of the field.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **The title is adequate for the contents of the manuscript.** |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this**  **section? Please write your suggestions here.** | **I think the abstract is comprehensive, it summarizes the principal results of the research work in a compact format while maintaining the interest in further reading the manuscript. There are some words**  **that, in my opinion, shouldn’t be present in an abstract, such as ‘‘assume’’, in an abstract, there are only**  **confirmed results, therefore an assumption shouldn’t be included in the abstract.** |  |
| **Are subsections and structure of the manuscript appropriate?** | **Yes, the overall structure of the manuscript is ok and adheres to the standard format of a scientific paper.** |  |
| **Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.** | **The manuscript deals with the evaluation of a novel leaf extract (Terminalia Catappa) as corrosion inhibitor for Al and Cu. The main issue with the manuscript, is the fact that it only employs one quantitative technique which is mass loss determination, although this technique can be used to determine inhibition efficiency it should always be backed up by a second quantitative technique, for example, an electrochemical technique such as electrochemical impedance spectroscopy or potentiodynamic polarization curves. Corrosion is an electrochemical phenomenon and as such electrochemical techniques should always be present when assessing any compound as a corrosion inhibitor. Furthermore, the discussion around the adsorption mechanism indicates that chemisorption increases with temperature,**  **this is true for a limited temperature range for any given compound since the energy provided while rising temperature is being used to reach the activation energy of the molecule. However, further** |  |

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|  | **increases beyond this threshold could modify the molecular structure of the compounds present in the leaf extract, and then it would not be representative of the original extract. Additionally, in regards to the adsorption of TCE on Al, the determination coefficients presented in the text are low when compared to the values reported for the Langmuir isotherm fitting in the case of TCE adsorption on Cu, usually a good R2 value for a linear fitting is around 0.99 (which is the case for TCE on Cu) however, for TCE on Al the values reported are below 0.99 and considerably far from it to be considered acceptable fits, were other isotherm models considered?**  **The FTIR plots are very low in resolution, better quality plots should be provided, increasing resolution to be readable. Additionally, further discussion should be provided regarding the intensity reductions of**  **some peaks.**  **Similarly, SEM micrographs are very low in resolution making it very difficult to discern experimental conditions when recording the SEM images (this data should also be provided in section 2.5), also an EDS elemental analysis is recommended to confirm the presence of adsorbed molecules.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention**  **them in the review form.**  **-** | **More references are needed to completely provide context for the research work, in the introduction, when talking about the consequences of corrosion in metals and alloys, only one reference is given, even**  **though in the literature several references (dealing with corrosion studies of the metals presented in the**  **manuscript) can be found. For the context of corrosion inhibitors, a similar situation occurs, there are multiple papers published dealing with organic eco-friendly corrosion inhibitors in literature, yet only one reference is provided, same with adsorption isotherms. Another issue with references is the order, for**  **some reason, the first reference in the introduction is reference 21, it should be 1 if we are using the first appearance criteria.** |  |
| Minor REVISION comments  **Is the language/English quality of the article suitable for scholarly communications?** | **There are several typos and grammar issues in the text of the manuscript, especially in the introduction and results sections.** |  |
| **Optional/General** comments | **In general, the manuscript deals with an interesting subject, which is a current topic in the corrosion research field. However, the paper requires additional work to be acceptable for publication, at least one**  **electrochemical technique should be used to corroborate the data obtained by the mass loss test, as well as**  **a revision of the discussion regarding the adsorption isotherms, as stated in the ‘‘scientific correctness of this manuscript’’ section of this form.** |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(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)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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**Reviewer Details:**

**Jorge Alberto Ramirez Cano, Universidad Veracruzana, Mexico**