



SDI Review Form 1.6

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| Journal Name: | Chemical Science International Journal |
| Manuscript Number: | Ms_CSIJ_50182 |
| Title of the Manuscript: | CORROSION MITIGATION OF GRAY CAST IRON AND ALUMINUM IMMERSSED IN 0.5M NaOH USING WATER HYACINTH (Eichhornia crassipes) PLANT EXTRACT ELECTROCHEMICAL AND WEIGHT LOSS METHOD |
| Type of the Article | Original Research Article |

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



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PART 1: Review Comments

| | 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) |
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| <p>Compulsory REVISION comments</p> | <ol style="list-style-type: none"> 1. Page 1. Title. Line 1. The word "immersed" is not necessary and should be omitted. 2. Page 1. Title. Line 2 should read "leaf" not "plant" to specify clearly about the part of investigated plant. 3. Page 1. Title. Line 3 should read "..extract by electrochemical and weight loss methods" 4. Page 1. Abstract. Line 7 should read "..the as-received samples..." 5. Page 1. Abstract. Line 10 and 12. Are 25% and 15% w/w? 6. Page 1. Abstract. Line 16 should read "..concentration. Therefore, the use of..." 7. Page 1. Abstract. Line 16. "controlled" should be changed to "decreased" or "reduced". 8. The keyword "Microstructure" is too broad and not clear; therefore, it should be "metal product microstructure" or "surface analysis" 9. The keyword should read "..(Eichhornaia...)" 10. NaOH should not be a keyword. "Basic dissolution" or "Corrosion in basic conditions" would be better. 11. It is not clear from reading why basic condition is chosen. There should be descriptive sentences that basic conditions keep the extract in suspension form well, which are very important for real applications. 12. There should be the description about measuring corrosion rate by weight loss versus electrochemical methods. Due to possible errors in weight transferring and measurements, electrochemical methods might be better in almost all aspects. The experiments by electrochemical methods have to be done anyway, right? Why don't we take advantage of doing two things in one experiment? 13. Page 2. Introduction. Line 3 should read "..exercise certain types of interaction..." 14. Page 2. Line 5 should read "...interactions their usefulness is impaired...." 15. Page 2. Line 7 should read "...appearance. This loss occurs either by..." 16. Page 2. Line 8 should read "As a part of our..." 17. Page 2. Line 11. Ahmed Ref needs to be clearly specified. 18. Page 2. Line 12 should read "...can compromise material integrity" but "...and impact assess,.....and people." Is not understandable. 19. Page 2. Line 13 should read "...if no measures are..." 20. Page 2. Line 20 should read "...environment (Raja...)" 21. Page 2. Line 21 should read "...inhibitors are more eco-friendly which are usually from harmless plants...." 22. Page 2. Line 23 should read "..is subjected to corrosion (Abdel-Gaber...)" 23. Page 3. Line 4 should read "...that lives and reproduces by..." 24. Page 3. Line 4 should read "...of fresh water. The..." 25. Page 3. Line 6 should read "...give a two-phase solution..." 26. Page 3. Line 8 should read In previous research, no accounts have..." 27. Page 3. Line 13 should read "...dissolves in the latter." 28. The language in this above paragraph of Page 3 is not smooth and beautiful, in addition to not well arranged. The outline should be drawn to clarify the points and then the whole paragraph rewritten. 29. Page 3. Line 20. After the phrase Table 1 is the results and they should be moved to the results section. 30. Page 3. Line 22. After the phrase Table 2 is the results and they should be | |



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| | <p>moved to the results section.</p> <p>31. Page 3. Line 22 should read "...range of 2.1 -4.3%; therefore, the iron..."</p> <p>32. Page 4. Line 1 should read "...are magnesium and..."</p> <p>33. Page 4. Line 4 should read "...to transport alkaline fluids..."</p> <p>34. Page 4. Line 7 should read "...10-11 mm. The aluminium samples..."</p> <p>35. Page 4. Line 12. How many decimal points of the weighing balance? This should be specified as well as the trademark and model if possible.</p> <p>36. Page 4. Line 18 should read "...area to extract higher..."</p> <p>37. Page 4. Line 24. This should be moved to results section.</p> <p>38. Page 5. Line 3. The sentence is not scientifically clear. What is the proof?</p> <p>39. Page 5. Line 5 should read "Table 4 shows the amount of chemicals per 50 cl of distilled water for..."</p> <p>40. Page 5. Line 10 should read "...acid and water have been..."</p> <p>41. Page 5. Line 11 and 12. This is the result and it should be moved to results section.</p> <p>42. Page 6. Line 22 should read "where CRinh..."</p> <p>43. Page 7. Line 1 should read "...the as-received..."</p> <p>44. Page 7. Line 5 should read "...sizes. Gray cast..."</p> <p>45. Page 7. Line 6 should read "...in normal conditions in the absence of..."</p> <p>46. Page 7. Line 12 should read "...soda environment. The corrosion reactivity of..."</p> <p>47. Page 7. Line 16. The chemical equation should be shown for clarity and the references given. Would they be metal oxides rather than hydroxides on the surface protective layers? Previous work should be looked up and clearly stated.</p> <p>48. Page 7. Line 17-20 should read "From Table 5 and 6 it could be observed that the control sample (A) could only last 9 days due to the harsh effect of sodium hydroxide on aluminum while sample A1 with 5% inhibitor concentration could last 21 days."</p> <p>49. Page 8. Line 9 should read "...to a great extent (Olorruntoba..."</p> <p>50. Page 8. Line 13 should read "Figure 2 reveals that..."</p> <p>51. Page 8. Line 18 should read "Table 10-14 show the results of..."</p> <p>52. Page 8. Line 19 should read "...experienced weight gain which..."</p> <p>53. The protective layers should be discussed in details for both substrates and compared.</p> <p>54. Why does the efficiency fluctuate with days? This must be further discussed.</p> <p>55. Page 9. Line 4 and 6 should read "V vs Ag/AgCl" Also Page 10, Line 1 and Line 3" as well as those all over the manuscript.</p> <p>56. Page 9. Line 4 should read "...A/cm² whereas aluminium..."</p> <p>57. Page 9. Line 23 should read "...A/cm² whereas the sample..."</p> <p>58. Page 10. Line 4 should read "...extract inhibitor. Considering..."</p> <p>59. Page 10. Line 15 should read "...samples. Plate 1 and 2 displays..."</p> <p>60. Page 11. Line 4 should read "Plate 5 and 6 reduced the rate..."</p> <p>61. Page 11. Line 7 should read "...of the as-received gray..."</p> <p>62. Page 11. Line 15. What molecules? This must be clearly specified. Should it be "species"?</p> <p>63. Page 12. The conclusion is supposed to be written in paragraph with clearly arranged back-up outline and words of sequence such as firstly, secondly and so on should be used for clarity.</p> <p>64. Page 12. Line 6. The reason must be stated about previous problem encountered and why the state of colloid helps in corrosion inhibition.</p> <p>65. Page 12. Ref. 2. Line 15. What is the publisher and what pages?</p> <p>66. Page 12. Line 20 should read H₂SO₄</p> <p>67. Page 13. Line 2 should read "Sons."</p> <p>68. Page 13. Line 5. The font must be changed, not all capitalized.</p> <p>69. Page 13. Line 12 should read H₂SO₄</p> | |
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| | <p>70. Page 15. Caption of Figure 1 should read “..for aluminium samples in...” This pattern must be used all over the manuscript for consistency.</p> <p>71. Page 23. The significant figure of the corrosion rate must be corrected all over the manuscript.</p> <p>72. Page 24. The significant figure of inhibition efficiency must be corrected all over the manuscript. The concentration of the inhibitor must also be specified all over the manuscript.</p> <p>73. Page 25 Line 2 should read (Total surface area = 448 mm²) all over the manuscript.</p> <p>74. Page 34. “extract” [misspell] and it should be checked all over the manuscript.</p> | |
| <u>Minor</u> REVISION comments | | |
| <u>Optional/General</u> comments | | |

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) |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

Reviewer Details:

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| Name: | Pipat Chooto |
| Department, University & Country | Prince of Songkla University, Thailand |