

Review of: "Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays"

Arockia Jayalatha Kulandaisamy¹

¹ SASTRA Deemed University

Potential competing interests: No potential competing interests to declare.

Authors have made detailed research about the influence of salinity on plant growth and the role of FeONP to enhance growth in salinity conditions. A graphical abstract presented by the authors detailing the experimental procedure is very effective. The following points might be considered to enhance the quality of the manuscript.

Comments

1. In line no. 21, authors may include the maximum allowed level of ethanol exposure values.
2. In line no. 40, the sentence that starts as 'A few research work...' needs to be revised.
3. Line no. 49 needs to be revised.
4. Authors should format the data under the column 'Ethanol concentration (ppm)' in Table 1 by clearly stating the minimum and maximum values/range. These values should be clearly presented, especially for the references 24 and This work.
5. The claim in line no. 54 for "(1-3) % Sn-ZnO films" is not explicit in Table 1.
6. Moreover, Table 1 compares the efficiency of the prepared samples with the existing one, so this might be included in the section prior to the conclusion.
7. What is the purpose of knowing the hydrophobicity of the surface using sessile contact angle measurements?
8. The average particle size calculated from XRD analysis is not enough to substantiate, since the sample exhibited a complete amorphous nature. Authors have to validate the observed value with some other technique like zeta particle size analysis.
9. Authors have used the terms FeO nanoparticles and Fe nanoparticles inconsistently throughout the manuscript. Authors should clearly explain whether the synthesized nanoparticle is in the form of a metal or a metal oxide.
10. Authors are not even trying to plot the graphs for the obtained characterization results (XRD, UV-vis, FTIR); the screenshot pane was pasted and it's completely not suitable for publication elsewhere.
11. In UV-vis analysis, the spectral peak of the sample has an absorbance of 3.74, which is too high, and usually the absorbance values should be from 0.1 to 1.0. In case of higher absorbance values, the sample has to be diluted prior to analysis. Also, the wavelength corresponding to the peak maxima does not support the existence of FeO nanoparticles.
12. Line no. 92 has to be modified, since pasting of the electrode should be first and then silver paste.

13. Authors should also mention the technique used to affix the copper electrode to the sensor surface.
14. With arbitrary units being given along the y-axis, how do authors claim the increase in intensity of the 002 peak with the addition of Sn? To do the comparison, authors may normalize the y-axis.
15. In line no. 110, is that $k=0.9$?
16. In line no. 127, the strain data provided by the authors should be corrected (both seem to be the same).
17. Line no. 143 is not clear. With the addition of 2 more electrons, how come the donor level will decrease?
18. Authors should reproduce Fig. B with a different colour combination, as it is very difficult to infer the results from the present graph.