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

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Potential competing interests: No potential competing interests to declare.

The manuscript is found to be interesting; however, there are some comments and suggestions for further improvement.

Abstract Part

Page 1, in the 3rd line

‘‘UV-Vis’’ instead of ‘‘UV-vis’’

Try to describe the uses of the listed instruments specifically to characterize the synthesized FeONPs.

(Do not make the description general.)

Page 1, authors' affiliations list should come before ‘Abstract’ or next to ‘Title.’

Introduction Part

Page 2, 1st paragraph, 3rd line from the bottom,

‘‘Na^+ and Cl^- ions’’ instead of ‘‘Na and Cl ions’’

Page 2, 2nd paragraph,

-2nd line, use respective charge signs to represent the mentioned ions

-3rd line, what is the negative impact of

Page 3, the 1st paragraph, the last statement

‘‘……..and beneficial to the environment.’’, In what aspects do NPs benefit the environment? State their specific uses clearly.

Page 3, the 2nd paragraph, last line

‘‘However, this study……..Fe nanoparticles…….’’ Which study? Is it your study or the cited author’s work? Please revise and clarify it.

The last paragraph,

Still, you have not told us anything about the application of FeONPs, which was reported by some earlier studies, even though there are so many research reports regarding FeONPs' application in the agriculture area.

Rather than discussing the Fe NPs, which is not your area of research, it is better to support and indicate your main work using the already reported literature about the effects of biogenic FeONPs on agricultural productivity, and then try to state the purpose of your work.

Materials and Methods

Page 4, Sub-topic 2.3.

1st line

UV-Vis……

The statement ‘‘During the experiments, the FTIR spectra were collected ……’’ is better restated as ‘‘During the experiments, the FTIR spectra were identified ……..’’. This is because FTIR spectra are identified, not collected.

‘X-ray,’ not x-ray

Page 5,

Full Width at Half Maximum (FWHM)

Page 7,

Please rewrite the %index formula correctly using the mathematical equation inserting tools.

Results

Page 7,

Subtopic 3.1

What do you mean by ethene and anti-symmetric words in the statement, “The peak at about 1430.786 cm^{-1} is an indication of **ethene** compound of CH **anti-symmetric** stretching.” The appropriate words to replace ethane & anti-symmetric may be **carbon-carbon double bond** & **asymmetric**, respectively. Please, recheck and revise them.

Please write carbonyl bond rather than CO (1850.270cm^{-1})

The absorption FTIR peak at 2062.780 cm^{-1} represents COO functional group less probably. This is because the FTIR peak is absorbed in the region from 3000 cm^{-1} to 2500 cm^{-1} as a highly broad peak.

You repeated the explanation of the FTIR peak at 1850.270cm^{-1}

Avoid writing the abbreviation of iron oxide nanoparticles sometimes as FEONPs and other times as FeO nanoparticles. Please, make it uniform.

The statement, “This is contrary to Tharani et al., (2015), who reported the maximum absorption peak of Fe-NPs at 272nm,” cannot support your synthesized NPs (FeONPs) because they are completely different nanomaterials. Fe NPs – metal NPs, but FeONPs – metal oxide NPs. Please revise it.

Page 8,

Figure 2. Graph of……? Why? It is not a graph, it is a spectrum (or a band). Therefore, correct as Figure 2. Spectrum (or band) of……..

Page 10, subtopic 3.5

In the 2nd line, please write the degree notation (º) correctly.

Page 12, Table 3

Correct the centimetre unit given in the bracket ……(Cm ??????)

Page 14,

Write FeONPs and FeO-NPs uniformly

Conclusion

2nd line,

-correct the temperature unit notation

-correct iron (iii)….. to iron (III)……

General comments

I think this article will contribute more to the research/investigation of the nanomaterials' applications for the improvement of agricultural yields.