For research article

Response to Reviewer 1 Comments

1. Summary

We sincerely appreciate the time you've taken to review this manuscript. Below, you'll find detailed responses along with the corresponding revisions and highlighted corrections.

2. Point-by-point response to Comments and Suggestions for Authors

Comments 1:

Line 50-51: This sentence should be revised, as there are several studies demonstrating the degradability of components such as pectins and hemicelluloses. Lignins are a bit more complex due to the size of their structure, but there are also studies demonstrating their degradability. Please correct the sentence.

Response 1: We sincerely appreciate your valuable feedback. We have revised the wording in detail in order to more accurately reflect the information provided. We have also improved the bibliographic references to strengthen the substantiation of the statement. We trust that these adjustments will contribute significantly to the clarity of the content.

You can see the changes made on lines 50 and 51, highlighted in yellow.

Comments 2:

Line 60-61: The literature considers that cellulose extracted by different chemical methods seeks not to alter the crystalline structure of cellulose, hence the discussion of cellulose type I with different allomorphs. Please correct this sentence and provide supporting bibliography.

Response 2: Thank you for your comments. We have carried out an exhaustive review of the information and the wording has been improved in order to reflect the content more accurately. In addition, we have included bibliographic sources to strengthen the substantiation of the statement. We are confident that these adjustments will contribute significantly to the clarity of the content.

You can see the changes made on lines 61-63, which are highlighted in yellow.

Comments 3:

Line 67: One of the most important factors improving bacterial cellulose production is nitrogen sources. Supplement this sentence with bibliography supporting the importance of substrate components in production efficiencies.

Response 3: Thank you for pointing that out. Additional literature supporting the importance of substrate components, specifically nitrogen sources, in enhancing bacterial cellulose production has been incorporated. The corrections made are detailed on lines 68 to 71 for your review.

Comments 4:

Line 237: In ATR infrared, the crystal has an effect on the final result. ¿Was any mathematical manipulation of the spectrum performed before comparing it with the literature?

Response 4: Thank you for your comment; the wording of the methodology in lines 241 to 271 has been corrected.

Comments 5:

Line 244: Why was a heating rate of 20°C per minute used, when the international standard in the literature suggests 10°C per minute? How might this affect sensitivity in the assay?

Response 5: Thank you very much for your comment. The wording of the methodology has been corrected in lines 241 to 271.

Comments 6:

Line 432: Change cm-1 to cm^{-1}.

Response 6: Thank you for your comment, the change has been made. Line 253

Comments 7:

Line 432: The text presents different ways of citing the bibliography, using numbers in some cases and authors' surnames in others. Please verify this.

Response 7: Thanks for your comment, this error has been corrected.

Comments 8:

Figure 4b: I recommend adding the DTG and complementing the analysis with what this graph shows.

Response 8: Thank you for the recommendation to have the requested information added. See Figure 6b

Comments 9:

Figure 5: The presented diffractogram has several issues. It is recommended to repeat the test or validate if there is a problem in the sample preparation.

Response 9: Thanks to the recommendation, the test has been corrected, and new results have been obtained. See Figure 7.

Comments 10:

Figure 5: Include the most important angles within the graph.

Response 10: Thanks for the recommendation, the most important angles have been included, see Figure 7.

Comments 11:

Lines 462-471: The X-ray diffraction analysis presents several problems, starting with the location of the amorphous pattern, which does not correspond to what has been studied and is found in the literature. Additionally, the poor definition of the amorphous pattern can ultimately affect the crystallinity calculation. I recommend reading more on the topic and improving the analysis. I recommend reading the following articles:

https://link.springer.com/article/10.1007/s10570-012-9833-y

https://link.springer.com/article/10.1007/s10570-020-03177-8

Response 11: I appreciate the comment and the information provided. The assay has been corrected; see Figure 7.

Comments 12:
Lines 475-479: Sample preparation for SEM analysis needs improvement. Dilute them better to analyze the fiber structure obtained under the substrates used. It is recommended to create a graph of diameter distribution and standard deviation of the diameters taken
Response 12: We appreciate the recommendation. The distribution graph of diameters and

the standard deviation corresponding to the diameters analyzed has been generated and can be seen in Figure 4.