

Review of: "Recycling of Waste Bamboo (*Bambusa vulgaris*) into Value-Added Platform Chemicals: Bioethanol and Bioethylene"

Santhosh Kumar Kookal

Potential competing interests: No potential competing interests to declare.

Title of the Paper: Recycling of Waste Bamboo (*Bambusa vulgaris*) into Value-Added Platform Chemicals: Bioethanol and Bioethylene

Summary:

This research work focuses on the recycling of waste bamboo into biofuels and bio-plastics such as bioethanol and bioethylene. The present work claims the effective utilization of bamboo cellulose for the production of biofuels and biopolymers through a sustainable, ecofriendly process. These findings are not new knowledge; however, the production processes are explained and presented with thorough literature support. Therefore, this paper needs some clarifications for scientific attention.

Specific comments and questions:

1. Page No. 2, section 2 - What does the meaning of FMCG? Expansions are not found in the literature.
2. Page No. 7: In step 2, the pretreatment process mentions the usage of NaOH and H₂O₂. How did you effectively and ecofriendly manage the wastewater after this pretreatment?
3. Page No. 9: In the methodology part, step 3 (enzymatic hydrolysis) and also in step 4 (fermentation process), the physico-chemical conditions for the enzyme reactions are not mentioned. References are also not included in the methodology.
4. Page numbers 12 and 13: The comparison chart between conventional ethanol and bioethanol physicochemical properties can be merged as a single table. Then it is very easy to read for the audience.
5. What are the fuel properties of the produced bioethanol from bamboo waste? It is not mentioned in the literature, and it should be compared with international standards.
6. The techno-economic importance of the present study is not discussed in the discussion part. The production cost of bioethanol or biopolymer per liter or kg of cellulose biomass against nonrenewable sources of bioethanol should be considered.
7. In the conclusion part, include the answer to this question: How did the findings of this study abate the environmental impact of petroleum-based bioethanol and bioplastics?
8. Include the statistical data of results for scientific validations and to strengthen the research work.



After the revisions and clarifications, this research paper will be suitable for publication.