Review of: "Investigation of Mechanical Properties of Sisal Fiber and Sugar Palm Fiber Reinforced Hybrid Composites"

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Potential competing interests: No potential competing interests to declare.

REVISION

This study analyzes the obtaining of polymer composites using different ratios of sisal fiber and sugar palm fibers (fiber load = 30 wt. %). These composites, produced by compression molding, were characterized by tensile, flexural, and impact strengths. The optimal sisal/sugar palm ratio was 20/10, which exhibits better tensile and impact strengths and lower water absorption. The composite with a sisal/sugar palm ratio of 10/20 showed high flexural strength. The manuscript lacks originality, and the description of the experiment and result discussion is lacking. This manuscript should not be accepted for publication in this form. It needs exhaustive reformulation and rewriting based on the following comments:

1. Some words in the manuscript should not be written in capital letters. I suggest rewriting them in lower case, for example, fiber-reinforced, tensile, compressive, three.
2. This sentence is incorrect; check this reference and rewrite it: “To remove cellulosic matter and improve the surface roughness of the fibre, it was treated with NaOH for 24 hours.” Cellulose is the structural component of fibers; its removal would imply a degradation of the fibers. The mentioned treatment partially removes the compounds soluble in an alkaline medium (extractives, hemicelluloses, and other soluble components) to improve the fiber surfaces.
3. Some abbreviations should be defined in the manuscript, for example, CG, KG, MWCNT.
4. This sentence is repeated three times in the manuscript in the same paragraph: “Common failure modes for the bast fiber-reinforced composite include fiber pull-out, fiber fracture, and matrix cracking, while delamination was reported as the major failure mode for the hybrid composite.”
5. In the Introduction section, clearly define the objective of this study. It is known that hybrid composites are composed of more than one kind of reinforcement in the same matrix to obtain a synergistic effect of the properties of reinforcements on the overall properties of composites. However, the authors do not mention the morphological or biometric differences of the fibers that could allow a synergistic effect on the properties of the epoxy composites.
6. In Materials and Methods, the paragraphs that do not refer to the description of the experimental work should go in the introduction. Only in this section should what refers to the raw materials used, the methods for preparation and characterization of the materials, and the standards used, among others, be included.
7. The Materials and Methods section is incomplete. It should be rewritten, detailing how the fibers were obtained and treated (moisture content, chemical composition, length of fibrous filaments, observations of morphology by

microscopy, among others). Indicate the amount of fiber treated with NaOH and the lost material after this treatment. Indicate what type of epoxy resin was used and its main specifications: operating temperature range, hardness, tensile, flexural, and impact strength, water absorption, and others.

8. Composites 70% resin + 0% sisal fibre + 30% sugar palm fibre and 70% resin + 30% sisal fibre + 0% sugar palm fibre should have been prepared to know the specific contribution of each type of fiber.
9. The standard deviations of the mechanical tests and the water absorption should be added.
10. The results are written as a technical report, and they remain to be discussed.