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| Book Name: | [Engineering Research: Perspectives on Recent Advances](https://www.bookpi.org/bookstore/product/engineering-research-perspectives-on-recent-advances-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_3876** |
| Title of the Manuscript:  | **Architectural Green Building Materials: Innovative composite material against the spread of Covid-19** |
| Type of the Article | **Book chapter** |

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| PART 1: Comments |
|  | Reviewer’s comment | Author’s Feedback*(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimumof 3-4 sentences may be required for this part.** | This manuscript is significant for the scientific community as it addresses the urgent need for innovative materials in the construction industry, particularly in the context of reducing COVID-19 transmission. By proposing a novel composite material combining HDPE and copper, the study aligns with sustainable building practices and enhances public health measures in architecture. The research also contributes to the development of green materials, advancing knowledge on antiviral surfaces and their applications in construction. These findings provide valuable insights for creating safer and more hygienic environments. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | The title of the article, *"Architectural Green Building Materials: Innovative composite material against the spread of Covid-19,"* is generally suitable as it reflects the focus on green building materials and their role in mitigating COVID-19 transmission. However, a more concise and precise alternative could be:**"Green Building Materials: A Novel HDPE-Copper Composite for COVID-19 Prevention."**This alternative highlights the key aspects of the study while maintaining clarity. |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abstract provides a good overview of the study, including its focus on developing a composite material to reduce COVID-19 transmission while meeting green building standards. However, it could be more comprehensive by incorporating a few key details:**Suggestions for Improvement:**1. **Emphasize testing results:** Mention specific outcomes of the tests (e.g., tensile strength, hardness) to highlight the material's performance.
2. **Clarify the innovation:** Briefly state what makes this composite unique compared to existing materials.
3. **Practical applications:** Add examples of where this material can be used in construction, such as tiles or door handles, to show its real-world relevance.
4. **Simplify technical terms:** Ensure the language is accessible, as the abstract is often read by a broad audience.
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| **Is the manuscript scientifically, correct? Please write here.** | The manuscript appears to be scientifically correct. It explains the process of developing a composite material using HDPE and copper to reduce the transmission of COVID-19. The study is supported by references to previous research and includes experimental results such as density, tensile strength, and hardness, which align with the goals of creating a green, antiviral building material.However, some areas could benefit from clearer explanations, such as the exact method used for testing and more detailed comparisons with existing materials. Overall, the science seems valid and well-supported. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | The manuscript provides a good number of references, and many of them are relevant to the topic of green building materials and antiviral surfaces. However, a closer look reveals some areas for improvement:1. **Recency:** While some references are recent (e.g., studies related to COVID-19 from 2020), others, such as those from 2007 or 2008, do not reflect the latest advancements in material science or green building technologies. Including more up-to-date studies could strengthen the paper.
2. **Relevance to composite materials:** The manuscript could benefit from additional references focusing on the combination of HDPE and copper in composite materials, as this is a central innovation of the study.
3. **COVID-19 and material science:** Adding recent studies about the use of antiviral materials, particularly copper, in reducing viral transmission enhances the scientific foundation.

**Suggestions for Additional References:*** Recent studies or reviews on copper's antiviral properties.
* Research on innovative uses of HDPE in building materials.
* Articles discussing advancements in composite materials for hygienic applications, especially during or after the COVID-19 pandemic.

Incorporating these updates would improve the relevance and recency of the reference list, making the study more robust and aligned with current research trends. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The language quality of the article is generally understandable but can be improved for scholarly communication. While the main ideas are clear, there are areas where the grammar, sentence structure, and word choice to be refined for better clarity and professionalism.**Areas for Improvement:**1. **Grammar and Syntax:** Some sentences are overly long or contain grammatical errors, making them difficult to follow. Simplifying and restructuring these sentences would improve readability.
2. **Consistency in Terminology:** Terms like "hygienic building" and "COVID-19 transmission probability" can be replaced with more standard scientific terms to ensure precision.
3. **Academic Tone:** Phrases such as "the architectural designer is locking for" should be revised for a formal tone (e.g., "the architectural designer seeks").
4. **Typographical Errors:** There are minor typos, such as "coronaviruses?" and inconsistent capitalization, that need correction.

**Suggested Improvements:*** Have the manuscript reviewed by a professional editor or a colleague fluent in academic English.
* Use tools like grammar-checking software to address basic errors.
* Ensure technical terms are used accurately and consistently throughout the paper.

With these refinements, the article would meet the language standards required for scholarly communication. |  |
| Optional/Generalcomments | **General Comments:**1. **Figures:**
	* **Quality:** The figures included in the manuscript, such as the microscopic examination image and the test specimen diagram, lack clarity. Ensure they are high resolution and labeled properly for better understanding.
	* **Descriptions:** Add detailed captions to each figure to explain what they represent and their relevance to the study.
	* **Formatting:** Figures should follow consistent formatting and align with the text to maintain a professional appearance.
2. **Formatting Issues:**
	* The manuscript has inconsistent formatting in sections such as headings, tables, and text alignment. Standardize these elements to enhance readability.
	* Ensure tables (e.g., material properties) are clearly formatted and include all necessary information.
3. **Structure and Flow:**
	* Some sections, like the introduction and conclusions, can be made more concise by removing repetitive content.
	* The results and discussion section should tie the findings more directly to the study’s objectives, emphasizing how the composite material's properties address green building needs and COVID-19 prevention.
4. **Technical Details:**
	* Include additional details on how the copper powder was distributed within the HDPE matrix. Was the distribution uniform? How was this verified?
	* Clarify the testing protocols for properties like hardness and tensile strength. Providing more specifics will increase the scientific rigor.
5. **Conclusion Enhancement:**
	* The conclusion could be expanded to include potential limitations of the study, such as scalability or cost implications of producing the composite material.
	* Suggest future directions for research, such as exploring other combinations of materials or additional applications for the composite.

The manuscript demonstrates a novel and relevant approach to developing antiviral green building materials, which is a timely and important topic. However, it requires major revisions before it can be considered for acceptance. Key areas for improvement include the clarity and quality of figures, language refinement, addressing formatting inconsistencies, and providing more detailed explanations in some sections.With these revisions, the manuscript has the potential to make a valuable contribution to the scientific community. |  |

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| **PART 2:**  |
|  | **Reviewer’s comment** | **Author’s comment *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*** |
| **Are there ethical issues in this manuscript?**  | ***(If yes, Kindly please write down the ethical issues here in details)*** |  |

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| **Reviewer Details:** |
| **Name:** | **Shahir Ahmad Safi** |
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