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| **Review on Research and Application of BF** | |
| Journal Name: | [**Advances in Research**](https://journalair.com/index.php/AIR) |
| Manuscript Number: | **Ms\_AIR\_132370** |
| Title of the Manuscript: | **Review on Research and Application of BF** |
| Type of the Article | **Review** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | 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 minimum of 3-4 sentences may be required for this part.** | **Basalt fibers have attracted the attention of researchers in recent years. It can be used to restrict the crack ability, enhance durability, and improve the strength of concrete mixture, asphalt mixtures, and soil mixtures. A complete review can give insight to civil engineers to use this kind of fiber in mixtures. Although the topic of this research is important to review, the review is not comprehensive.** | This article provides a comprehensive review of the mechanical properties, freeze-thaw resistance, and crack resistance enhanced by basalt fiber. It summarizes the current research status of basalt fiber, offering a reference for the subsequent research on basalt. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **No, using abbreviations in title is not appropriate, and this study focuses on using basalt fiber in concrete mixtures, so it is advisable to change the title to “****Review on Research and Application of Basalt Fiber in Concrete Mixtures”.** | Thank you for your valuable suggestions. I will modify the title. |
| 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 was good.** | Yes. I don't have any other opinions. |
| Is the manuscript scientifically, correct? Please write here. |  | Yes |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | **No, as a review paper, the references are too low and the review is not comprehensive. Many studies have not been reviewed in this study. I suggest some of them.** | Thank you for your valuable suggestions. |
| Is the language/English quality of the article suitable for scholarly communications? | **It should be checked as I see many grammatical and lexical issues.** | Thank you for your valuable suggestions. |
| Optional/General comments | **Comment 1: It is advisable to write BF in the paper title as its complete form, “Basalt Fiber”. Furthermore, this study only investigated the application of BF in concrete mixtures, therefore, it can be mentioned in the title.**  **Comment 2: Please only bring the surname of authors in the text. For instance, “Zong Liang et al. [9]” should be “Liang et al. [9]”.**  **Comment 3: Please check for your writing in whole manuscript. For instance, revise this sentence “Among the three BFs with different lengths, the one with a length of 12mm has the highest compressive strength, splitting tensile strength and flexural strength, and the fiber with a length of 18mm is superior to that with a length of 6mm.”. The one with a length of 12mm “resulted in” the highest compressive strength and the fiber with a length of 18mm “has superior performance” to that with a length of 6mm.**  **Comment 4: Section 2 lacks a table that shows the optimum BF content suggested in different studies.**  **Comment 5: The number of studies and references in section 2 is too low (only 5 articles). Please provide a more comprehensive review on “Enhancement of Mechanical Properties by BF”.**  **The following papers can be used:**  **Sim, J., & Park, C. (2005). Characteristics of basalt fiber as a strengthening material for concrete structures. Composites Part B: Engineering, 36(6-7), 504-512.**  **Branston, J., Das, S., Kenno, S. Y., & Taylor, C. (2016). Mechanical behaviour of basalt fibre reinforced concrete. Construction and Building Materials, 124, 878-886.**  **Wang, D., Ju, Y., Shen, H., & Xu, L. (2019). Mechanical properties of high performance concrete reinforced with basalt fiber and polypropylene fiber. Construction and Building Materials, 197, 464-473.**  **Jiang, C., Fan, K., Wu, F., & Chen, D. (2014). Experimental study on the mechanical properties and microstructure of chopped basalt fibre reinforced concrete. Materials & Design, 58, 187-193.**  **Comment 6: The authors only studied the effect of BF on slump in the mechanical properties section. They should make a separate section and investigate the effect of BF on the flowability of mixtures by slump and L-Box tests.**  **Comment 7: Check for the paragraph above section 3 “BF (BF) “.**  **Comment 8: Please define the abbreviations only once. For example, freeze-thaw cycles (FTC) has been defined many times.**  **Comment 9: The authors provided a comparison between basalt fiber and polypropylene fiber regarding improvement under freeze-thaw cycles in section 3, but they did not compare BF and PF in section 2 regarding strength improvement. Also, other fiber types, like steel fibers, should be compared.**  **You can use these papers:**  **https://www.researchgate.net/publication/351542758\_Effect\_of\_the\_addition\_of\_polypropylene\_fiber\_on\_concrete\_properties**  **https://www.nature.com/articles/s41598-024-58912-z**  **https://www.sciencedirect.com/science/article/pii/S2214509525002372**  **Comment 10: In section 3, NMR abbriviation should be bring right after nuclear magnetic resonance**  **Comment 11: A comparison between different fiber types should be done for crack resistance and fracture toughness in SCB samples in section 4.**  **You can use the following paper:**  **Arash Rajaee, A Davarpanah, P Pournoori, MS Yousefi, “Influence of Different Types of Fibers on the Fracture Strength of Asphalt Mixtures Using SCB specimens”. 5th International Congress on Civil, Architecture, and Urbanism in Asia, Bangkok, Thailand.**  **Comment 12: Please revise that before “respectively” at the end of the sentence; we need a comma. Revised it for the whole manuscript.**  **Comment 13: The paper should be checked by a native English writer for grammar and words used.**  **Comment 14: The authors should add a section on the field application of BF and its challenges and advantages.** | Thank you for your valuable suggestions. |

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| **PART 2:** | | |
|  | Reviewer’s comment | Author’s comment *(if agreed with the 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 detail)* | No |