Review of: "The Influence of Hot Extrusion on The Mechanical and Wear Properties of an Al6063 Metal Matrix Composite Reinforced With Silicon Carbide Particulates"

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Potential competing interests: No potential competing interests to declare.

The Influence of Hot Extrusion on The Mechanical and Wear Properties of an Al6063 Metal Matrix Composite Reinforced With Silicon Carbide Particulates

This article addresses the mechanical and wear behaviour study of aluminium 6063 alloy reinforced with different weight fractions of silicon carbide for 'as-cast' and 'hot extruded' conditions. The study aims to comprehensively analyze the impact of SiC reinforcement on the material's properties, exploring the synergy between the alloy matrix and the ceramic reinforcement. Experimental investigations include the fabrication of composite specimens with different SiC weight percentages, followed by detailed assessments of tensile strength, hardness, and wear resistance. Additionally, the study evaluates the influence of the manufacturing process (as-cast vs. hot extruded) on the mechanical and wear characteristics of the composite. The topic is relevant to this field and complements previous research with a nuanced understanding of the suitability and performance of Aluminum 6063/SiC composites for potential applications in structural and wear-resistant materials. The Abstract can be improved and supplemented with results. The Introduction can be improved by reviewing the latest literature. The Methodology needs to be improved and supplemented (samples, methods, etc.). The Conclusions are consistent with the arguments and results presented in the paper and give a good presentation of the topic, but can be improved. References are appropriate, but more recent ones should be added.

I have some suggestions for you to consider as minor revisions:

The abstract should be supplemented with the achieved results;

Typos must be corrected;

The introduction must be corrected and must contain a broader overview of the latest literature;

The Methodology needs to be improved and supplemented (samples, methods, etc.);

Improve the resolution of Figures 3 and 4, and Graphs 10, 13-17;

Fit the curves in Graphs 8, 11 and 13;

Improve the presentation of Figure 3 and Graph 12;

Improve the Conclusion;

More recent references should be added.