

# 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.

Confidential comments to the editor.

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

This paper provides very marginal significant advances. For this reason, I will partially recommend this paper for publishing after a substantial improvement in the manuscript (mainly in the introduction, results, and conclusion sections). Many works have been published in the same area. In general, the paper needs a lot of improvement. Overall, the manuscript fails to provide a good description of the performed work and does not provide a lot of original conclusions.

## Comments to the authors

### I would like to thank the authors for their work

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

My comments are as follows.

### General comments:

- In the introduction, authors need to connect the state of the art to your paper goals. Currently, this is not performed in a convincing way. Please follow the literature review by a clear and concise state of the art analysis. This should clearly show the knowledge gaps identified and link them to your paper goals. Please reason both the novelty and the relevance of your paper goals. The novelties/contributions are not clear from the introduction. They should be highlighted in a clear way.
- The story-line was missed in several parts of the paper. It should be re-checked according to the above point.
- There are many close works published with respect to this topic. It's better to enrich the references of the paper to give more interest to the paper. The reader is currently presented with incomplete information.

- Please compare your work with the literature and list the results in a table. Why this particular material/reinforcement particles were selected.
- Authors should provide the XRD analysis of both the matrix, reinforcement particles, and reinforcement particle/powder size analysis.
- Justify the reason the amount of SiC reinforcement is between 2 to 8wt.%
- Authors need to comprehensively analyze the influences of hot extrusion temperature, extrusion ratio, and surface quality, and then explain the novelty of their work and the method.
- The authors should provide a method of porosity determination/measurement.
- The authors should provide evidence of formation of porosity by optical/SEM microstructure.
- The authors should provide optical and SEM/EDS micrographs of both the matrix and composites to justify the uniform distribution and agglomeration of reinforcement particles in the matrix .
- The authors should conduct the wear test at different sliding velocities and should check the properties of different values of testing parameters.
- **Experiment schematic is missing from the paper.**
- **This is missing from the paper.**

The results and discussion part needs more elaboration, and only the trend of results is discussed in the manuscript. Include the discussion on the graphs and explain the science behind why this trend is achieved.

- Comparative study of stir cast and stir +hot extruded composites needs to be discussed.
- In the conclusions section, many conclusions are general conclusions that do not reflect the authors' work.