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.

Review report

Manuscript Title:

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

Manuscript ID: Qeios ID: DLUOH9

Dear Editor,

This article examines the mechanical and wear behavior of the aluminium 6063 alloy reinforced with silicon carbide in both as-cast and hot extruded conditions. The study found that reinforcement improved mechanical properties and wear resistance, particularly when subjected to hot extrusion, demonstrating the importance of lightweight composite materials in industrial and structural applications. In the final evaluation, in my opinion, it is good work, but it should be improved. However, I conclude that the reviewed article is appropriate for publishing in ***Qeios*** after major revision.

Kind Regards,

K. Rahmani

Comments on the paper are given as follows:

1. The Introduction should be increased; it is too short.
2. The novelty of the study should be described in the last paragraph with in-depth explanations related to its difference from previous research works.
3. Some literature should be meaningful for authors about composite material and Hot Extrusion in the introduction: (1) A study on damage evolution in Cu–TiO2 composite fabricated using powder metallurgy followed by hot extrusion; (2) Mechanical and corrosion properties of Mg–MgO and Mg–Al2O3 composites fabricated by the equal channel angular extrusion method.
4. The authors should compare the results of this work with already existing work.

5. What are the advantages and disadvantages of the current subject compared to other subjects? Authors are invited to comment on this situation.
6. The resolution of images should be improved, especially Figs 14, 15, 16, and 17, and, also, they should be merged by a,b,c,….
7. Some references are missing such as the ASTM G99 standard, ASTM B557M, and ASTM E-9 standards…. (repeated word 'standard')
8. The paper has been prepared as a technical report. Additionally, it needs more scientific investigation of the reported results. Authors are invited to extend the paper's results and avoid only reporting the test results. The paper should have more depth in the analysis of the results and especially in the justification of these results.
9. The detailed tribological mechanism should be fully discussed; it is poor.