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 article discusses the important role of lightweight composite materials in the context of industrial and construction applications. These materials are valued for their ability to adapt to specific designs and engineering requirements. The article focuses on the mechanical testing and wear resistance of the 6063 aluminum alloy reinforced by different weight fractions of silicon carbide, both after casting and the hot extrusion process.

Composite extrusion was carried out using the mixing casting method, and then samples were tested under hot extrusion. The mechanical and adhesive wear of cast and hot-extruded samples was analysed. The reinforcement additive improved the overall mechanical properties and wear resistance. Particularly important was the observation of a significant improvement in mechanical resistance and wear resistance after secondary treatment by hot extrusion.

Grammar Notes:

- The spelling of the word "behavior" should be corrected (Abstract, Tensile test results).

- Correct the entry 8wt% to 8wt%. (Also in the captions under the figures.)

- Introduction: In the sentence "Base aluminum alloys provide…," but reinforcing aluminum alloys (should be) with…., and in the sentence: "When a composite is composed of a base aluminum…," the coefficient of friction is significantly (should be) reduced. I suggest introducing a simpler sentence: .

- Experimental work: In the sentence :"A continuous stirring process… and the matrix alloy were (should be) assorted." Should be "Shimadzu microhardness tester." In the sentence "The notch is located…, opposite the hammer (should be) ." I suggest introducing a simpler sentence: "A tensile test was conducted on Al6063 and its developed composite systems using a 400 kN FIE (Fluid Instruments and Engines) machine. All samples underwent Vickers microhardness testing in accordance with ISO 6507."

- Results and Discussion:

In 3.1: Insert a comma and a period: This is consistent with the findings of other research, such as Hima et al.

In 3.2, In addition to photos of the test samples, it would be advisable to provide the dimensions/drawings of the test

samples (similarly in section 3.5). In the sentence "Furthermore, with…, the tensile strength improved (should be) as observed in graph 3."

In section 3.5, descriptions regarding Graph 8 and 11 should have a larger font. Sentence after correction:

From the above graph, 8-13 wear rates for the developed composite system under as-cast and hot extruded conditions reveal that as the load increases, the wear rate of the composite also increases due to higher contact pressures and increased adhesive forces. In the sentence "The coefficient of friction…," it was (should be) found to be. In the sentence …as seen in graphs 14-17 (should be).

In section 3.7, in the sentence: "in which it is seen ...flashes," (should be) and wedges.. It should read: Hot extruded materials have a higher material hardness and, thus, a lower wear rate.