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 comments

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

In this work, the experimental study explores the mechanical and wear behaviour of aluminium 6063 alloy reinforced with different weight fractions of silicon carbide for 'as-cast' and 'hot extruded' conditions. Both cast and hot extruded samples were investigated for mechanical and adhesive wear studies. The results show that the addition of reinforcement improved the mechanical properties and wear resistance, and a significant improvement in mechanical and wear resistance was observed when the samples were subjected to secondary processing through hot extrusion. There are some problems that need to be discussed and addressed in the manuscript:

1) What is the average particle size of the initial SiC?
2) The clarity of Graphs 1-7, Figs. 1-4, and Graphs 14-17 needs to be improved.
3) There is no scale on SEM images.
4) How about the distribution state of SiC with different weight percentages in as-cast and hot extrusion composites?
5) Whether the SiC particles broke on the 500-ton extrusion press?
6) Why does the porosity of as-cast composites increase with increasing weight fractions of SiC?
7) It is suggested to use stress-strain curves to show the mechanical properties of the composites.
8) What is the state of SiC after the tensile test, compression test, and impact test?
9) Why did the wear rate and coefficient of composites decrease with increasing weight fractions of SiC content?
10) In this paper, in the result analysis part, the statement “Similar observations have been made by other studies” appears several times, so what is the difference between this study and these existing studies mentioned?