

Review of: "Investigating the Mechanical and Tribological Effects of MoS₂ Reinforcement in AZ91 Magnesium Alloy: A Comprehensive Experimental Study"

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Potential competing interests: No potential competing interests to declare.

The study entitled "Investigating the Mechanical and Tribological Effects of MoS₂ Reinforcement in AZ91 Magnesium Alloy: A Comprehensive Experimental Study" seems to have been conducted well; however, it lacks in-depth analysis. It is presenting results without sufficient explanations. The work seems good, but it needs some changes as mentioned below:

1. The composition of the Mg alloy composites with MoS₂ as reinforcement has not been mentioned anywhere in the manuscript.
2. As mentioned in the results section, "As shown in Table 3, the average grain size within the stir zone (SZ) of the AZ91-FSP specimens was reduced to approximately $1.4 \pm 0.5 \mu\text{m}$, compared to the $7.4 \pm 1.0 \mu\text{m}$ of the full-annealed samples," however, these results are not mentioned in Table 3.
3. No explanation has been provided for the results obtained after tensile tests. Why do samples processed at different RPM show such results? The explanations can be related to the SEM images, and information regarding the strengthening mechanism should be provided to give sufficient explanation to the phenomena.
4. SEM images of the samples developed at varying speeds and the SEM images of the fracture zone need further explanations.

I am sure that after providing sufficient explanations, the manuscript will be more suitable for acceptance. All the best.