# 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 paper deals with investigation of influence of processing parameters on the friction stir processing of AZ91 and a Mg alloy reinforced with $MoS_2$.

In other words, I would encourage the authors to make some of the revisions that will be needed to bring the paper to a publishable point.

1. Figure 2 is not clear; it needs more resolution.
2. In section 2, page 3, the authors mentioned, "42 holes were bored and each hole was filled with MoS2," but the authors need to describe accurately how these holes were distributed along the weld zone.
3. In page 6, the authors mentioned, " The microstructure of the FSP-modified AZ91 magnesium alloy (AZ91-FSP) exhibited significant grain refinement compared with that of the fully annealed baseline material. As shown in Table 3… etc.," but table 3 does not mention that.
4. In figure 3, the stress-strain curve is not stable and shows uncertainty; the authors need to test repeatability to increase the test reliability.
5. In table 3, due to the length of the weld zone, the authors need to measure multiple hardness values rather than three tests for every specimen.
6. In figure 7, I think that there are duplicate images of "sample 1100 rpm"; the authors need to review the figure carefully.
7. In section 4, Concluding Remarks, the authors need more scientific explanation according to the many results that were obtained.