

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 overall work done is very well organized and novel. Innovative work is done.

The study investigates the effects of incorporating Molybdenum Disulfide (MoS₂) into the AZ91 magnesium alloy to improve its mechanical and tribological properties. Using a stir casting technique, various weight percentages of MoS₂ (0.5%, 1%, 1.5%, and 2%) were added to the AZ91 alloy. The resulting composites were subjected to a series of tests to evaluate their hardness, tensile strength, wear resistance, and coefficient of friction. The experimental results demonstrated that the inclusion of MoS₂ significantly enhanced the hardness and wear resistance of the AZ91 alloy, with optimal improvements observed at specific reinforcement levels. The study concludes that MoS₂ reinforcement can effectively enhance the performance characteristics of the AZ91 magnesium alloy, making it more suitable for demanding engineering applications.