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| Book Name: | [Chemical and Materials Sciences: Research Findings](https://www.bookpi.org/bookstore/product/chemical-and-materials-sciences-research-findings-vol-1/)  |
| Manuscript Number: | **Ms\_BPR\_4807** |
| Title of the Manuscript:  | **A Comprehensive Study on the Hardness and Wear Behavior of AlSi1MgMn Alloy: The Influence of YSZ Reinforcement and T6 Heat Treatment** |
| Type of the Article | **BOOK CHAPTER** |

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| PART 1: Comments |
|  | Reviewer’s comment**Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript is important to the scientific community as it provides valuable insights into the enhancement of aluminum alloy properties through YSZ reinforcement and T6 heat treatment. By systematically investigating the effects of reinforcement and heat treatment on hardness and wear resistance, the study contributes to the ongoing development of high-performance metal matrix composites (MMCs) for industrial applications. The findings are particularly relevant for aerospace, automotive, and machinery sectors, where lightweight materials with superior mechanical and tribological properties are crucial. Additionally, this research bridges a knowledge gap by evaluating the combined impact of YSZ and heat treatment on AlSi1MgMn alloy, offering a novel approach for improving material performance in demanding environments. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Suggested topic: “Enhancing Hardness and Wear Resistance of AlSi1MgMn Alloy with YSZ Reinforcement and T6 Heat Treatment" |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abstract requires a clearer explanation of the practical implications of the findings. Consider summarizing how the improvements in wear resistance translate to specific industrial applications. |  |
| **Is the manuscript scientifically, correct? Please write here.**  | **YES** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **YES** |  |
| Is the language/English quality of the article suitable for scholarly communications? | YES |  |
| Optional/General comments | The discussion effectively interprets findings, but drawing comparisons with similar studies in more depth would provide stronger validation.Conclusion can be made more quantitative |  |

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| **PART 2:**  |
|  | Reviewer’s comment | Author’s comment *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?**  | *(If yes, Kindly please write down the ethical issues here in detail)* |  |

**Reviewer details:**

**Amulya Bihari Pattnaik, Indira Gandhi Institute Of Technology (Igit), India**