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| Book Name: | **Proceedings of the 8th International Conference on Solidification and Gravity** |
| Manuscript Number: | **Ms\_BPR\_** **3590.7** |
| Title of the Manuscript:  | **Solidification Kinetics of Zr-Cu-based Alloys: Experiments on the Ground and in Microgravity** |
| Type of the Article | **BOOK CHAPTER** |

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| PART 1: Review Comments |
| Compulsory REVISION comments | Reviewer’s comment | 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.** | This manuscript provides important insights into the solidification behavior of the Zr50Cu35Ni15 alloy, particularly in how gravity affects crystal growth. The combination of experiments in both normal and reduced gravity environments is a unique and valuable approach. The findings on dendrite morphology and recalescence front shape transitions contribute to our understanding of solidification kinetics in metallic glasses. Overall, this work advances the field by providing new information that could help improve material design and processing techniques. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Solidification Kinetics of Zr-Cu-Ni based Alloys: Experiments on the Ground and in Microgravity |  |
| 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. | 1. Eliminate Minor Repetitions
2. Do not write long sentences.
3. Rewrite long sentences for better flow and clearity
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| **Are subsections and structure of the manuscript appropriate?** | Yes, the subsections and structure of the manuscript are appropriate. The content is well-organized with clear divisions between introduction, experiment, results, discussion, and summary. |  |
| **Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.** | The manuscript is scientifically robust and technically sound due to its comprehensive experimental approach, utilizing both ground-based and microgravity environments to study the solidification kinetics of Zr-Cu-based alloys. The use of advanced techniques such as high-speed cameras, energy-dispersive X-ray (EDX) mapping, and scanning electron microscopy (SEM) provides detailed, quantitative data on dendrite growth and recalescence front shapes, ensuring reliable results. The analysis is well-supported by previous research, and the discussion of the kinetic transition in dendrite morphology aligns with established models. Furthermore, the careful consideration of experimental challenges, such as sample rotation and oxidation, adds credibility to the results. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **Add 7-8 more references of year 2022,2023 and 2024** |  |
| Minor REVISION commentsIs the language/English quality of the article suitable for scholarly communications? | 1. Try to rewrite long sentences for better flowand control
2. Minimize the typo-error.
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| Optional/General comments | Overall article is satisfactory, from my side it can be accepted after following minor revisions. 1. Eliminate Minor Repetitions
2. Do not write long sentences.
3. Rewrite long sentences for better flow and clearity
4. Add 7-8 more references of year 2022,2023 and 2024
5. Minimize the typo-error.
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| **PART 2:**  |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with 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 details)* |  |

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| **Reviewer Details:** |
| Name: | **Raj Kumar** |
| Department, University & Country | **Swami Keshvanand Institute of Technology Management & Gramothan, India** |