|  |
| --- |
|  |
| 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\_4777** |
| Title of the Manuscript:  | **Comprehensive study of graphite-molybdenum brazed joints: structure, strength** |
| Type of the Article | **Book Chapter** |

**Special note:**

**A research paper already published in a journal can be published as a Book Chapter in an expanded form with proper copyright approval.**

**Source Article:**

**This chapter is an extended version of the article published by the same author(s) in the following journal.**

**Metallurgical and Materials Engineering, 29(1): 115-128, 2023.**

**DOI:** [**https://doi.org/10.56801/MME989**](https://doi.org/10.56801/MME989)

|  |
| --- |
| 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.** |  |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** |  |  |
| 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. |  |  |
| **Is the manuscript scientifically, correct? Please write here.**  |  |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** |  |  |
| Is the language/English quality of the article suitable for scholarly communications? |  |  |
| Optional/General comments | **Comprehensive study of graphite-molybdenum brazed joints: structure, strength****Reviewers Comments**: 1. Significant differences between graphite and molybdenum's thermal expansion coefficients can lead to residual stresses and cracks.
2. Excessive carbide formation (especially TiC layers) can reduce flexibility and cause premature joint failure.
3. Some filler metals (e.g., Ti-Cr-V) create pores, which may weaken the joint under mechanical stress.
4. Requires precise temperature control, vacuum conditions, and specialized materials (e.g., Pd-based fillers), increasing production costs.
5. Some fillers (e.g., Ti–Zr–Nb–Be) require special safety measures due to beryllium toxicity.
6. Cu-Ti-Ni and Zr-Pd-Mo systems showed inconsistent mechanical strength, making them less reliable compared to Pd-Ni-Cr-Ge.
7. Requires careful annealing, cleaning, and pre-treatment to remove gases and ensure good adhesion.
 |  |

|  |
| --- |
| **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:**

**Harvinder Singh, Chandigarh Group of Colleges Landran, India**