**Review Form 3**

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| Journal Name: | Chemical Science International Journal |
| Manuscript Number: | Ms\_CSIJ\_142728 |
| Title of the Manuscript: | Influence of Calcination Temperature on the Physicochemical Properties of Limestone from the Aktau Deposit |
| Type of the Article | Original Research Article |

**PART 1: Comments**

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|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer**  **review.** | **Author’s Feedback (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. | Study on the physicochemical properties of carbonate rocks from the Aktau deposit  Relationship between firing temperature, lime reactivity, and microstructural characteristics.  Findings about the Optimal reactivity is achieved at 1100 °C due to favorable microstructural  development. | This study investigates the physicochemical properties of carbonate rocks from the Aktau deposit. It highlights the relationship between calcination temperature, lime reactivity, and microstructural characteristics. The findings show that optimal reactivity is achieved at 1100 °C due to favorable microstructural development. These results are important for both the scientific understanding of limestone transformation processes and for practical applications in construction materials. |
| Is the title of the article suitable?  (If not please suggest an alternative title) | Yes | Yes, the title is suitable as it clearly reflects the content and the main focus of the study. If needed, it can also be shortened to “Effect of Calcination Temperature on Physicochemical Properties of Aktau Limestone,” but the current form is already accurate and appropriate. |
| 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. | Yes | The abstract is comprehensive and reflects the main objectives, methods, and results of the study. It can proceed as it is, with only minor wording improvements for clarity. No additions or deletions are required. |
| Is the manuscript scientifically, correct? Please write here. | Yes | Yes, the manuscript is scientifically correct. The experimental work was carried out using standard and reliable methods, and the results are consistent with established knowledge in the field of limestone calcination. The conclusions are well supported by the presented data, which makes the study scientifically sound. |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention  them in the review form. | Yes | Yes, the references are sufficient and include both classical sources and recent publications relevant to the topic. The list provides a solid foundation for the study, and the included works adequately support the research objectives and conclusions. |
| Is the language/English quality of the article suitable  for scholarly communications? | Yes | Yes, the English quality of the article is suitable for scholarly communication. Minor wording adjustments were made to improve clarity and consistency, but the overall language is clear and appropriate for publication. |
| Optional/General comments | Microstructure study shows the effect of calcination at increasing temperatures.  The paper gives idea about the calcination of Aktаu deposit at optimal temperatures.  Findings about the usage in industrial processing and construction chemicals | The microstructural study clearly demonstrates how increased calcination temperature affects the reactivity of the limestone. The paper provides useful information on the optimal calcination conditions for the Aktau deposit, which is valuable for both scientific understanding and practical applications. The results also emphasize the potential use of the material in industrial processing and in the production of construction materials, making the study relevant for future applied research. |

**PART 2:**

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|  | **Reviewer’s comment** | **Author’s Feedback (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) | There are no ethical issues in this manuscript. The study does not involve human or animal subjects, and all experiments were carried out according to standard laboratory procedures. The data are original and reported with due care. |