

[Review Form3](#)

Book Name:	<a href="#">Science and Technology: Developments and Applications</a>
Manuscript Number:	Ms_BPR_3925
Title of the Manuscript:	EXPERIMENTAL DEVICE TO EVALUATE MINERAL TRAPPING IN SANDSTONES AS A MEANS OF SUPERCRITICAL CO <sub>2</sub> (scCO <sub>2</sub> ) STORAGE
Type of the Article	Book chapter

**PART 1: Comments**

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>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.</b>	Manuscript holds significant importance for the scientific community as it addresses the critical challenge of CO <sub>2</sub> storage, a vital component of mitigating climate change. By exploring the mineral trapping mechanism in sandstone aquifers under supercritical CO <sub>2</sub> conditions, the study provides valuable insights into the geochemical interactions and storage capacities of such formations. The development of the ATAP device and its application in reproducing storage conditions offers a practical approach to understanding long-term CO <sub>2</sub> sequestration processes. Furthermore, the findings can contribute to advancing carbon capture and storage (CCS) technologies, fostering the development of sustainable and scalable solutions to reduce greenhouse gas emissions globally.	
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>	The title is clear and descriptive but could be improved to better reflect the broader scientific and practical implications of the study. Here are some suggestions: <ol style="list-style-type: none"> <li>Development and Application of an Experimental Device for Evaluating Mineral Trapping in Sandstones for Supercritical CO<sub>2</sub> Storage</li> <li>Innovative Laboratory Techniques for Investigating Mineral Trapping of Supercritical CO<sub>2</sub> in Sandstone Reservoirs</li> </ol>	
<b>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.</b>	The abstract of the article is informative and provides a good overview of the study, including the motivation, methodology, and key outcomes. However, there is room for improvement in terms of clarity and comprehensiveness. Here are some suggestions: <ol style="list-style-type: none"> <li><b>Contextualize the Problem:</b> Provide a brief statement on the global significance of CO<sub>2</sub> sequestration and why this study is novel compared to existing research.</li> <li><b>Summarize Key Findings:</b> Include a concise statement about the main results, such as changes in porosity or observed mineralization effects.</li> <li><b>Clarify Specific Outcomes:</b> Be explicit about the significance of the experimental techniques and their contribution to the conclusions.</li> </ol>	
<b>Is the manuscript scientifically correct? Please write here.</b>	The manuscript is scientifically correct in its approach and aligns with established research practices. However, incorporation of the below listed suggestions would enhance its scientific rigor, making it more robust and impactful for the scientific community. <b>Suggestions for Improvement:</b> <ol style="list-style-type: none"> <li><b>Add Statistical Analyses:</b> Include statistical validation to support conclusions, such as significance tests for changes in porosity.</li> <li><b>Clarify Methodological Details:</b> Provide more detail about the experimental setup, materials used, and how variability was controlled.</li> <li><b>Deepen Discussion:</b> Expand the discussion to include a critical comparison with other studies and explain how these findings contribute to advancing the field.</li> <li><b>Strengthen Conclusions:</b> Ensure the conclusions are fully supported by the data and avoid overly general statements.</li> </ol>	

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<p><b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b></p> <p>-</p>	<p>Suggestions for Additional References:</p> <ol style="list-style-type: none"> <li>1. Recent Advances in CO<sub>2</sub> Mineralization:             <ul style="list-style-type: none"> <li>o Dunsmore, H. E. (2020). "Advances in geological carbon sequestration technologies." <i>Geochemical Transactions</i>.</li> </ul> </li> <li>2. Improved Porosity Analysis Techniques:             <ul style="list-style-type: none"> <li>o Liu, Q., et al. (2021). "State-of-the-art imaging techniques for analyzing CO<sub>2</sub> sequestration in geological formations." <i>Journal of Greenhouse Gas Control</i>.</li> </ul> </li> <li>3. Comprehensive Review on CCS:             <ul style="list-style-type: none"> <li>o Herzog, H. J. (2018). "A perspective on carbon capture and storage." <i>Energy and Environmental Science</i>.</li> </ul> </li> <li>4. Recent Studies on Sandstone Reservoirs:             <ul style="list-style-type: none"> <li>o Wu, X., et al. (2019). "Effects of brine composition on mineral trapping in sandstone formations." <i>International Journal of Greenhouse Gas Control</i>.</li> <li>o</li> </ul> </li> </ol>	
<p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p>The article is comprehensible and uses appropriate technical language, but it requires some refinement to meet the standards of high-quality scholarly communication.</p> <p>Suugestions are:</p> <ol style="list-style-type: none"> <li>1. A thorough review by a native English speaker or a professional editor can address minor grammatical errors and improve sentence structure.</li> <li>2. Replace casual phrases with more formal and precise expressions appropriate for scholarly communication.</li> <li>3. Follow a consistent style for terminology, abbreviations and formatting throughout the manuscript.</li> </ol>	
<p><b>Optional/General</b> comments</p>		

**PART 2:**

	<p><b>Reviewer's comment</b></p>	<p><b>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)</b></p>
<p><b>Are there ethical issues in this manuscript?</b></p>	<p><b>(If yes, Kindly please write down the ethical issues here in details)</b></p>	

**Reviewer Details:**

<p><b>Name:</b></p>	<p><b>Atul Prakash Vishwakarma</b></p>
<p><b>Department, University &amp; Country</b></p>	<p><b>DPG Institute of Technology &amp; Management, India</b></p>