

Review Form 3

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_123483
Title of the Manuscript:	Design, optimization, and performance characterization of Terracotta Flat Tubular Direct Evaporative Cooler
Type of the Article	Research

Review Form 3

PART 1: Review Comments

Compulsory REVISION 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>
<p>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.</p>	<p>This manuscript is significant for the scientific community as it explores an innovative approach to sustainable cooling by utilizing terracotta flat tubular structures in direct evaporative cooling systems. The study's focus on using locally sourced materials and the potential for scalability makes it particularly appealing for addressing real-world challenges in sustainable design.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The current title, "Design Optimization and Performance Characterization of Terracotta Flat Tubular Direct Evaporative Cooler," is suitable as it accurately reflects the scope and content of the manuscript. However, a more concise alternative could be: "Performance Optimization of a Terracotta-Based Direct Evaporative Cooling System."</p>	
<p>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.</p>	<p>The abstract is generally comprehensive, covering the key aspects of the study, including the design, experimentation, results, and recommendations.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The subsections and overall structure of the manuscript are appropriate, logically organized, and easy to follow. Each section flows well into the next, providing a clear narrative of the research process from design to performance evaluation.</p>	
<p>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.</p>	<p>The manuscript is scientifically robust and technically sound. The experimental methodology is well-detailed, including the setup, parameters, and performance metrics. The use of performance indicators such as cooling capacity, COP, and cooling effectiveness adds depth to the analysis. The inclusion of uncertainty analysis further enhances the credibility of the results, demonstrating a thorough understanding of the factors influencing system performance. The discussion of results is grounded in scientific principles, making the findings reliable and relevant.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. =</p>	<p>The references are sufficient and include recent studies relevant to evaporative cooling and sustainable materials. However, incorporating a few more recent studies or reviews focusing on innovative cooling technologies and comparisons with other sustainable cooling systems could strengthen the literature background.</p>	

Review Form 3

<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The manuscript's language quality is generally suitable for scholarly communication, though minor proofreading for grammar and sentence structure improvements would enhance readability.</p>	
<p>Optional/General comments</p>	<p>Suggestions: Simplify complex sentences and ensure consistency in terminology used throughout the manuscript.</p> <p>Comprehensive Experimental Methodology: The paper details a thorough experimental approach, including climatic analysis, performance evaluation, and parametric tests. This enhances the reliability and validity of the findings.</p> <p>Clear Performance Metrics: The study provides clear definitions and calculations for performance metrics like temperature drop, cooling effectiveness, and coefficient of performance (COP). This makes it easy for readers to understand the evaluation criteria.</p> <p>Real-World Applicability: The discussion of the system's applicability in rural households, schools, and small-scale farming operations highlights its potential impact on improving indoor air quality and reducing postharvest losses.</p> <p>Area for improvement:</p> <p>Data Presentation: Tables summarizing experimental results are valuable, but they could be more concise. Highlighting key findings directly in the tables (e.g., using bold or color-coding) would make the data more accessible at a glance.</p> <p>Comparison with Existing Systems: The study mentions that the performance of the cooler is low compared to recent DEC systems. Providing a comparative analysis with specific data points from other cooling technologies would strengthen this point and highlight the cooler's unique advantages.</p> <p>Uncertainty Analysis: The article includes uncertainty analysis, which is excellent, but it could be more detailed. A separate section or expanded discussion on how uncertainties impact the overall results would add value.</p> <p>Environmental and Economic Analysis: While the system's sustainability is mentioned, a deeper economic analysis, including cost comparisons with traditional systems, and a life cycle assessment (LCA) would provide a more holistic view of its benefits.</p>	

PART 2:

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

Reviewer Details:

<p>Name:</p>	<p>Muthuraman Subbiah</p>
<p>Department, University & Country</p>	<p>College of Engineering and Technology, University of Technology and Applied Sciences, Oman</p>