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| Book Name: | [Engineering Research: Perspectives on Recent Advances](https://www.bookpi.org/bookstore/product/engineering-research-perspectives-on-recent-advances-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_** **5062** |
| Title of the Manuscript:  | **CFD MODELING OF HEAT TRANSFER ENHANCEMENT USING NANOFLUID** |
| Type of the Article | **BOOK CHAPTER** |

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| 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.** | The manuscript titled *"CFD Modeling of Heat Transfer Enhancement Using Nanofluid"* presents valuable insights into the application of aluminum oxide nanofluids for improving heat transfer efficiency in double tube heat exchangers. This study is important for the scientific community as it offers both numerical and analytical evaluations using CFD simulations, which aid in understanding the behavior of nanofluids under various Reynolds numbers and volume fractions. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Yes |  |
| 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. Grammatical errors,
2. Add aim.
3. Add key findings,
4. Repetations is there try to avoid,
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| **Is the manuscript scientifically, correct? Please write here.**  | 1. Multiple spelling and grammatical issues
2. “Volume fraction” should consistently be referred to with the unit (%) and not interchangeably with “concentration”.
3. No any mention of grid independence or convergence criteria, which are standard for validating CFD results.
4. No any **limitations, assumptions** and **uncertainty/error sources** in CFD simulations and analytical comparisons are added.
5. Graphs and figures are useful but need better **labeling, resolution,** and **captions** for clarity.
6. The temperature and velocity contours are not clearly explained or analyzed in the discussion
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| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | 1. Very old references are used and very less in numbers atleast use 30 – 35 references.
2. Important to cite more recent studies (2020–2024).
3. No ant references are provided for best practices in CFD simulations.
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| Is the language/English quality of the article suitable for scholarly communications? | The **language and English quality of the article is poor.** |  |
| 1. Optional/General comments
 | 1. Have you conducted a grid independence test or mesh sensitivity analysis? Please conduct and add in reviser article.
2. Which specific turbulence model was used in the simulation (e.g., k-ε, k-ω SST)?
3. Mention boundary conditions, assumptions clearly.
4. No any validation of the CFD model using experimental or benchmark data
5. Are thermal and physical properties of nanofluids assumed constant or temperature-dependent?
6. How was convergence ensured during the simulation process?
7. Please discuss limitations of the single-phase CFD model.
8. What about transitional modeling between Re = 2000–3000?
9. Add parametric study or optimization of nanofluid concentration, tube dimensions, or flow rate.
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| **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?**  |  |  |

**Reviewer details:**

**Anant Sidhappa Kurhade, Dr. D. Y. Patil Institute of Technology, India**