

Review of: "Numerical Study of Thermal Performance on Fin and Tube Heat Exchanger with Flat Rectangular and Sinusoidal Winglet Vortex Generators"

Masoud Sahami¹

¹ Iran University of Science and Technology Tehran

Potential competing interests: No potential competing interests to declare.

In the present study, numerical models have been used to investigate the effect of vortex generators on the flow structure, temperature distribution, pressure, friction coefficient, and total thermal performance in the airside part of exchangers. The results show that the use of this technique improves the heat transfer performance in the exchangers compared to the baseline condition. The results of the current study are amazing and will be published after applying the following corrections through a major revision to the entire text.

- Abstract

1. In the abstract, the corresponding sentence can be summarized as: "... variation in the flow structure, friction factor, overall thermal enhancement factor, temperature, and pressure distribution"
2. Briefly describe the important quantitative results of your study, such as performance improvement percentages, etc., in the abstract.
3. Is the Reynolds definition based on the tube diameter? Apply it in the text, please.

- Introduction

1. The introduction needs deep structural and continuity edits.
2. The first sentences of the introduction should be moved to the end of the abstract. The claim sentences are usually used at the end of the introduction or abstract.
3. "1, 2, 3" is correct.
4. The point at the end of the sentence has not been used in "Experimental investigation made ... winglets. The results..."
5. In the sentence "(P and V type) and the result" it is better that the phrase "and the result..." be removed.
6. "Reynolds numbers ranging" is correct.
7. "With and without holes" is correct.
8. In the abstract and end of the introduction, it is necessary to express the main goal of the study, its state of the art, and the difference between your work and the literature.

- Sections 2 and 3

The language level of the text is weak. Authors should review and improve the entire manuscript in terms of spelling and

grammar.

1. Typos and grammar mistakes: "with and without holes" is correct.
2. "P-type" is correct.
3. "Angle of 50°" is correct.
4. Before "and," a comma should be used. "30°, 40°, 60°, and 90°" is correct. "Prandtl number of 0.7, and for different ..." is correct.
5. The sentence "The results showed that the smooth channel..." is unintelligible.
6. The quality of the figures, aspect ratio, and text is not appropriate in Figure 1. The text in Figure 6 is so small and cannot be read.
7. "In the present work" is more common.
8. In many parts of the text, the defining words "the" or "a" are either not used or used incorrectly.
9. Please present one of the meshings of the solution domain in the text.
10. It is recommended that the number of grids be written in Figure 2 in the rounded format.
11. Please avoid using repeated sentences in scientific texts. The reason for using the k-epsilon model has been repeated two times in the text (in sections 2.1 and 3).
12. In Figures 4 and 5, the contour legend has been put on the figure, which destroys the beauty of the figures.
13. The percent amounts and the numbers do not necessarily need to be presented up to the second-order decimal. The presentation will be fine enough in rounded format (rounded natural number).

- Conclusions

1. "factor (f)" is correct.
2. "..., and overall thermal factor major outcomes..." is correct.
3. Generally, a comma is used before "respectively."