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

Martín Picón-Núñez[1]

1 Universidad de Guanajuato

Potential competing interests: No potential competing interests to declare.

The paper provides an exploration of thermal and hydraulic aspects related to rectangular and sinusoidal vortex generators. The subject matter is of interest and suitable for the journal. However, there are several critical issues that require attention before it can be considered for publication. In my opinion, the paper necessitates a comprehensive and meticulous revision to improve its quality and readability. The specific concerns outlined below must be addressed:

1.- Grammar and Syntax. To enhance the overall clarity of the paper, I strongly recommend that the authors thoroughly revise the grammar and syntax. The current manuscript is challenging to read and follow due to these issues.

2.- Clear Description of Contribution. The paper lacks a clear description of its contribution. The authors should explicitly address why they chose to study vortex generators within the low Reynolds number range (400 to 1100) and at an attack angle of 25º. Additionally, they should explain the rationale behind selecting this specific angle of attack and how the Reynolds number range was determined.

3.- Numerical Model Validation. Has the numerical model been validated against any experimental data? This critical aspect should be addressed to ensure the reliability of the findings.

4.- Figure Captions. Figures 4 and 5 consist of three parts each, labeled as a), b), and c). It is essential to provide clear descriptions in the figure captions to help readers understand the content.

5.- Figure 4a does not exhibit the same proportion as figures b and c. A similar issue is observed in Figure 5. Ensuring consistent proportions across all parts of these figures is crucial for accurate representation.

6.- Correction of Figure 7's "y" axis is required. Attention to this detail will enhance the overall quality of the visual representation.

7.- There is an issue with Figure 7. It arises from the fact that, according to the authors, larger values of j/f correspond to improved thermal and hydraulic performance—specifically, higher heat transfer enhancement and lower friction factor. However, the perplexing observation is that these larger values are associated with the baseline configuration, surpassing even those of the sinusoidal vortex generator. Unless a correction is implemented, an explanation is needed.