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Nor Azwadi Che Sidik <azwadi@akademiabaru.com>
to me

Amrizal Nalis:

Thank you for submitting the manuscript, "Effects of Fin Geometry and Reynolds Number on Heat Transfer Enhancement of Flat-Plate Thermal Collector: A Numerical Analysis" using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Submission URL: https://semarakilmu.com.my/journals/index.php/CFD_Letters/authorDashboard/submission/1014
Username: amrizal

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Nor Azwadi Che Sidik

CFD Letters

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Round 1

Round 1 Status
Submission accepted.

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[CFD Lett.] Editor Decision	2022-10-05 11:29 AM
[CFD Lett.] Editor Decision	2022-11-08 08:18 AM

Reviewer's Attachments

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[CFD Lett.] Editor Decision

2022-10-05 11:29 AM

Amrizal Nalis:

We have reached a decision regarding your submission to CFD Letters, "Effects of Fin Geometry and Reynolds Number on Heat Transfer Enhancement of Flat-Plate Thermal Collector: A Numerical Analysis".

Our decision is: Revisions Required

Please submit the revised article by 5 Nov 2022

Editorial Comments:

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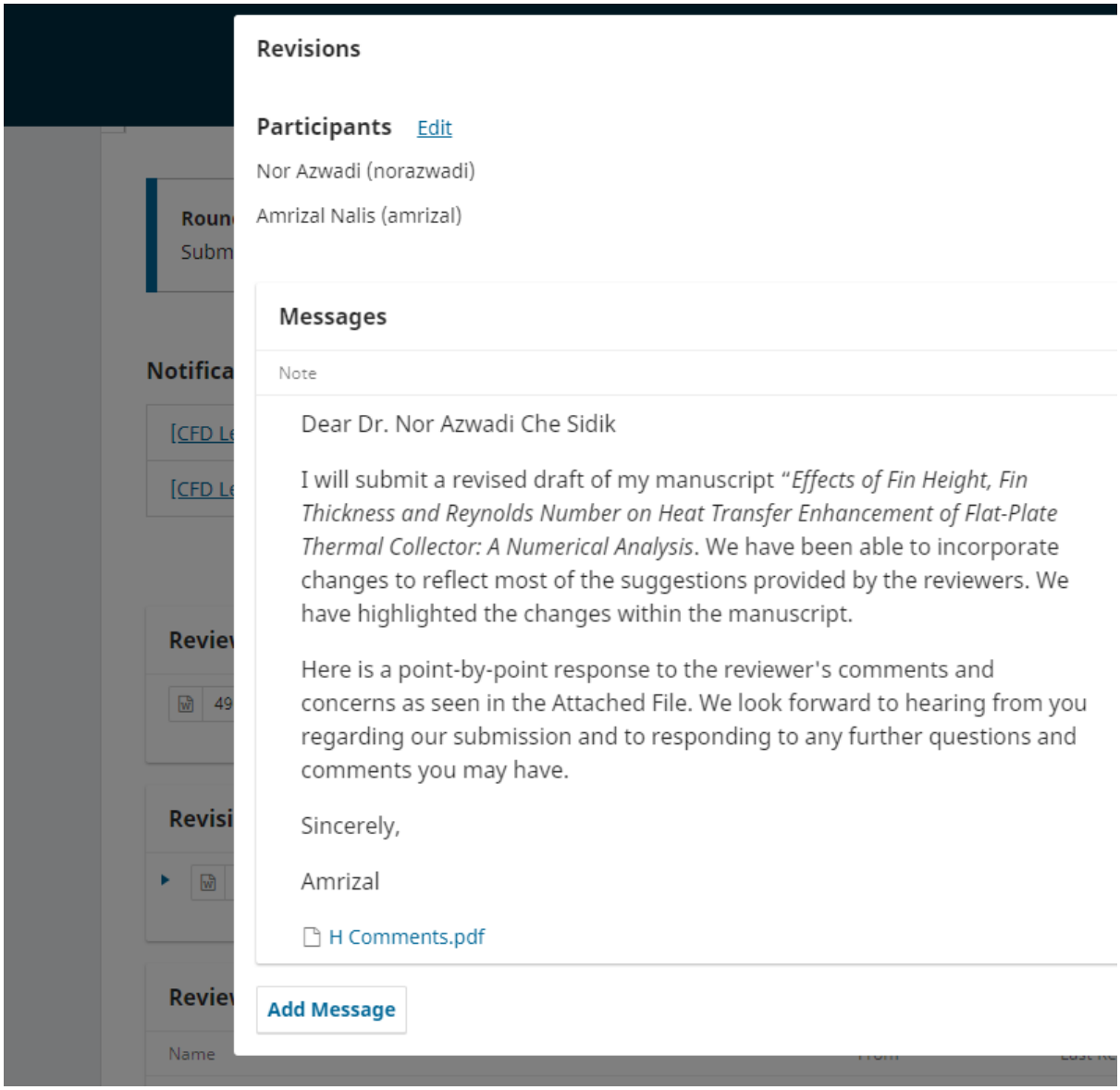
Reviewers' Comments:

Reviewer H:

This paper investigates the effects of fin thickness, fin height, and Reynolds number on the thermal performance of flat-plate thermal collectors by numerical simulation. The results show that increasing fin height/thickness and Reynolds number reduces the surface temperature of the flat-plate surface and increases the heat transfer coefficient.

1. What is the basis for determining the optimal mesh number ($1.284.500 \times 10^6$)?
2. The text in Fig. 2 is too small.
3. In section 2.1, the expression "better heat capacity" is inaccurate. The author can directly state the material.
4. What does the mesh structure of the fluid domain look like?
5. The author attributed the decrease in surface temperature caused by the increase in fin thickness to the increase in fin volume. However, the increase in fin thickness will also lead to a change in air flow field characteristics. Should this be considered?
6. The legend in Fig.6a should be "Temperature." The temperature unit is incorrectly written.
7. The legend ranges of the four different fin thicknesses in Fig. 6 are not the same, so the comparison in Fig. 6 is inaccurate.
8. Page 23: what is the heat capacity effect?
9. The increase of the Reynolds number will inevitably lead to the heat transfer coefficient increase. When the Reynolds number equals 3000 and 4500, how much will the heat transfer coefficient increase?
10. The description of "fin geometry" in the paper title and body should be specific to fin height and width.
11. In chapter 3.2, the author thinks that the higher the Reynolds number, the sharper the changing trend of the convective heat transfer coefficient is, but there is little difference between Re = 4500 and 6000. It should be explained.

Recommendation: Revisions Required


Revisions
Participants Edit
Nor Azwadi (norazwadi)
Amrizal Nalis (amrizal)
Messages
Note
Dear Dr. Nor Azwadi Che Sidik
I will submit a revised draft of my manuscript "Effects of Fin Height, Fin Thickness and Reynolds Number on Heat Transfer Enhancement of Flat-Plate Thermal Collector: A Numerical Analysis. We have been able to incorporate changes to reflect most of the suggestions provided by the reviewers. We have highlighted the changes within the manuscript.
Here is a point-by-point response to the reviewer's comments and concerns as seen in the Attached File. We look forward to hearing from you regarding our submission and to responding to any further questions and comments you may have.
Sincerely,
Amrizal
H Comments.pdf
Add Message

Reviewers' Comments:

Reviewer H:

This paper investigates the effects of fin thickness, fin height, and Reynolds number on the thermal performance of flat-plate thermal collectors by numerical simulation. The results show that increasing fin height/thickness and Reynolds number reduces the surface temperature of the flat-plate surface and increases the heat transfer coefficient.

A revised draft of my manuscript titled "*Effects of Fin Height, Fin Thickness and Reynolds Number on Heat Transfer Enhancement of Flat-Plate Thermal Collector: A Numerical Analysis*. We have been able to incorporate changes to reflect most of the suggestions provided by the reviewers. We have highlighted the changes within the manuscript:

1. What is the basis for determining the optimal mesh number (1.284.500 x 10^6)?
   Response: Thank you for pointing this out. We agree with this comment. Therefore, we have provided the optimal mesh number in the Table 1.

2. The text in Fig. 2 is too small.
   Response: Thank you for this suggestion. We agree with this and have incorporated your suggestion. We have presented the text with the font higher than before to make it clearly.

3. In section 2.1, the expression "better heat capacity" is inaccurate. The author can directly state the material.
   Response: We agree with this and have incorporated your suggestion. We have changed the expression "better heat capacity" by using aluminum as the material of the flat-plate absorber.

4. What does the mesh structure of the fluid domain look like?
   Response: Thank you for pointing this out. We agree with this comment. Therefore, we have added the mesh structure of the fluid domain in the Figure 1.

5. The author attributed the decrease in surface temperature caused by the increase in fin thickness to the increase in fin volume. However, the increase in fin thickness will also lead to a change in air flow field characteristics. Should this be considered?
   Response: Thank you for this suggestion and we have considered, because Reynolds Number (Re) is kept constant but the inlet fluid velocity (V) is allowed to vary, for that reason, the increase in fin thickness will also lead to a change in airflow field characteristics that affect the surface temperature as seen in Figure 6-7.

6. The legend in Fig.6a should be "Temperature." The temperature unit is incorrectly written.
   Response: Thank you for this suggestion. We agree with this comment. Therefore, we have written the temperature unit (°C).

7. The legend ranges of the four different fin thicknesses in Fig. 6 are not the same, so the comparison in Fig. 6 is inaccurate.
   Response: Thank you for pointing this out. We agree with this comment. We have provided similarly legend ranges of the four different fin thicknesses. Therefore, the thermal performance in Fig. 6 can be compared accurately.

8. Page 23: what is the heat capacity effect?
   Response: Thank you for this suggestion. We have included more detail the explanation of the heat capacity effect based on the increase of the fin thickness as stated at the end of Chapter 3.1.

9. The increase of the Reynolds number will inevitably lead to the heat transfer coefficient increase. When the Reynolds number equals 3000 and 4500, how much will the heat transfer coefficient increase?
   Response: Thank you for this suggestion. We agree with this comment. We have included the value of the heat transfer coefficient increase as seen in the first paragraph of Chapter 3.2. If Reynolds Number is increased by four times, there is an increase in the mean convective heat transfer coefficient of 146% compared to the initial condition. Furthermore, there is also an increase in the mean convective heat transfer coefficient of 28% for Reynolds Number from 3000 to 4500 as depicted in Figure 8b-c.

10. The description of "fin geometry" in the paper title and body should be specific to fin height and width.
    Response: We agree with this and have incorporated your suggestion. We have changed specifically the “fin geometry” term to fin height and width as seen in the paper title and body.

11. In chapter 3.2, the author thinks that the higher the Reynolds number, the sharper the changing trend of the convective heat transfer coefficient is, but there is little difference between Re = 4500 and 6000. It should be explained.
    Response: Thank you for pointing this out. We agree with this comment. Therefore, we have stated in the Chapter 3.2. This may be due to the slight thermal effect, especially under the higher Reynold Numbers conditions that have less time to transfer the heat compared with the lower airflow.

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Nor Azwadi <azwadi@akademiabaru.com>
to me

Amrizal Nalis:

We have reached a decision regarding your submission to CFD Letters, "Effects of Fin Geometry and Reynolds Number on Heat Transfer Enhancement of Flat-Plate

Our decision is to: Accept Submission

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