Review of: "Design of an intelligent controller for improving the solar system efficiency"

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Potential competing interests: No potential competing interests to declare.

Reviewer Comments

This paper presents ensuring the optimal performance of photovoltaic systems necessitates the development of a maximum power point tracker MPPT aimed at extracting the utmost power from the photovoltaic array. This study delves into the efficacy of a fuzzy logic controller compared to conventional controllers designed for tracking the maximum power point. The simulation model, employed for this research work, is implemented using Matlab/Simulink. a detailed comparison between the classic Perturb and Observe P.O algorithm and another intelligent based on the fuzzy algorithm is conducted to assess MPPT accuracy. The followings should be carefully addressed in the revision to be published in Qeios.

1. The authors should be followed the instruction of the Results in Engineering all parts and sections in this manuscript.
2. Complete mathematic calculation model with all nomenclature missing. Please check the number of each section, equation, and chart.
3. The abstract needs more quantitative results. The abstract section is an important and powerful representation of the research. It is better that the results should be presented with the support of specified data. Please provide your contribution and work novelty.
4. The authors should indicate this technique to enhance system performance. Also, the author should add more references that discuss the effect of using this technique. It is recommended that the authors carry out wide analysis and comparison with the state-of-the-art studies.
5. Most tables and figures are needed improve the quality of all tables and figures.
6. Add references for all equations.
7. I would also expect to validate with two more experimental works available in the literature.
8. The literature review must be improved. Please highlight in the literature review the differences between previous papers and your paper. Please clearly indicate the knowledge gap and prove that it is a really not analyzed area of the field. Please indicate new approach / new methods in a comparison to the existing investigations (literature review should be extended by adding the below references). Analysis on flow structure and improvement of heat transfer in 3D circular tube with varying axial groove turbulator configurations. Investigation of Thermo-Hydraulics Flow and Augmentation of Heat Transfer in the Circular Pipe by Combined Using Corrugated Tube with Dimples and Fitted with Varying Tape Insert Configurations. Flow Field Structure, Characteristics of Thermo-Hydraulic and Heat Transfer

Performance Analysis in a Three Dimensions Circular Tube with Different Ball Turbulators Configurations. Investigation of thermal flow structure and performance heat transfer in three-dimensional circular pipe using twisted tape based on Taguchi method analysis. A numerical study to investigate the effect of turbulators on thermal flow and heat performance of a 3D pipe. Thermal flow and heat performance analyses in circular pipe using different twisted tape parameters based on design of experiments. The effect of different twisted tape inserts configurations on fluid flow characteristics, pressure drop, thermo-hydraulic performance and heat transfer enhancement in the 3D circular tube. Characterization of internal thermohydraulic flow and heat transfer improvement in a three-dimensional circular corrugated tube surfaces based on numerical simulation and design of experiment. The influence of different twisted tape inserts configurations on thermo-hydraulic performance and enhancement of heat transfer in the 3D circular tube. Evaluation of thermal hydraulic flow and enhancement of heat performance in different 3D dimpled tube configurations according to design of experiment analysis.

9. Description of analysis method should be improved. More quantitative information were needed.
10. You need to add error analysis of your results and add the error bars in your graphs to indicate your accuracy measurements.
11. Improve work justification.
12. More quantitative conclusions should be presented. Please prepare additional comparisons, some percentage differences. There is a lack of quantitative conclusions which should contain main findings from the paper and highlight the new and high novelty and contribution of your work to the field.
13. Present the mathematical equation of the boundary conditions and initial condition.
14. I would also suggest including in the conclusion section but also in several other places in the manuscript discussion and comparison with findings from other authors with similar published research work.
15. The conclusion section on lacks in summative conclusions. The main results, novelty and academic contributions should be emphasized in this section. Moreover, are the results obtained in this paper really applicable in other similar researches?
16. In the discussion development, it is very important to emphasize points of agreement or disagreement between results in this work and others cited in references part of manuscript.
17. Authors should discuss limitations of the current study and possible improvements for future directions/research works.
18. The nomenclature list is not complete. Please recheck parameters, variables and abbreviations appeared in the manuscript and append them to the nomenclature list. Authors are requested to check the reference format and correct some inconsistent formats.
19. Finally, the author to read through the whole text and correct it to make it more reader-friendly.