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Paper: “Theoretical Reliability Analysis of a Segmented 2-out-of-3 Particulate Filter System for Industrial Chimneys”

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Peer review:

Reviewer 1: Veronica Flores Sanchez
Technological University of Veracruz, Mexico

Reviewer 2: Satish Kumar
Dire Dawa University, Ethiopia

Reviewer 3: Blinded

Reviewer C:
Recommendation: Resubmit for Review

The TITLE is clear and it is adequate to the content of the article.

The title is clear to a great extent. However, there is opportunity to improve the relevance of the title. A better suggestion would be "Theoretical reliability analysis of a modified particulate filter system for use in industrial chimneys"

The ABSTRACT clearly presents objectives, methods, results, and conclusions.

The abstract is clear. There is a need to specify the objectives separately in the study. The objective has been mentioned along with the introductory statement. A separate sub-heading is required to define the objective clearly.

There are a few grammatical errors and spelling mistakes in this article.

There are hardly any grammatical mistakes. The English used in the study is adequate and meets the research standards

The study METHODS are explained clearly.

The method used is combines under introduction. There is a need to clearly state the research method. This is a theoretical study on reliability assessment of an air filter system for industrial application. Although the author has pointed out the relevant theoretical explanations and calculations, this study requires practical approach using Design of Experiments (DoE). DoE enables identify factors that impact the system's reliability. To compare various parameters of the new system (multiple filter) with the existing system (single filter), a t-test or ANOVA could be used.

FMEA could be used for identifying what could fail and prioritizing risk - risk mitigation strategy which is a part of reliability study (the author did not mention about it). Fault Tree Analysis (FTA) could be used for predicting the failure.

How did the author arrive at the data given in figure 5 without any practical experiment? Please explain clearly

The results are clear and do not contain errors.

The data given is not supported with facts and the data must be traceable, even if it is a theoretical study. Please provide adequate data supporting the theoretical study

The CONCLUSION or summary is accurate and supported by the content.

This article appears like a proposal and requires a proper order with data traceability. How did the author acquire data without practical study (and with a change in the system, affecting the operating environment). Has the author considered the operational environment while providing the data given in the study. The author is adding three filters and what are the materials, ingredients or chemical substances that are available in the three new filters composed of or contain?

The list of REFERENCES is comprehensive and appropriate.

References seem appropriate

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the RESULTS of this paper.

[Poor] 1-5 [Excellent]

1

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

1

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

3

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

Supporting documents for the figures and data (traceability of data). How did the author arrive at these data without considering the components or ingredients in the gas filter? What do the new 2 additional gas filters include. Please specify and provide supporting evidence.

Also, break down and separate subheadings for introduction, objective, research method, analysis & discussion, results and conclusion

why there are no measurements?

why no simulation is done (at least simulation is necessary if there is no product development lab or facility for experiment).
