

Review of: "Optimized Material Removal and Tool Wear Rates in Milling API 5ST TS-90 Alloy: AI-Driven Optimization and Modelling with ANN, ANFIS, and RSM"

Noe Alba-Baena¹

¹ Universidad Autónoma de Ciudad Juárez

Potential competing interests: No potential competing interests to declare.

This is a paper that presents an interesting approach to the analysis and optimization of machining parameters. The comparison between methodologies is an attractive addition. After reading this document, there are some suggestions to consider before this is ready to be published:

- from the title and objectives, the classification of the API 5ST TS 90 alloy may be rewritten to describe the characteristics of the product, then, Then describe the properties of the alloy and the treatment characteristics.
- In section 2.0 Materials and Methods, to Include vendor brands may help in refer the standards and replicability of the experiments.
- It is important to include the characterization of the raw materials and tools, include the optical microscopy, and SEM.
- a common application implies that the tool will have a larger hardness than the materials, it is suggested to reconsider the tool selection because in this case the tool hardness is of 67 HRB and for the material 97HRB it is expected that the material will be prompted to wear the tool, It is expected to have a larger TWR than a conventional machining process, then the study may be redirected to the effect on the tool characteristics and properties.
- To have a comparative analysis of the three models the authors can include the effect on the final machining process and remark the importance of these findings in correspondence to the initial discussion presents in the introduction section.
- to reach the proposed goal of finding the Optimized Material Removal and TWR, larger descriptions can be included, where the authors discuss the results on ANFIS showing the least predicted variation responses, but including the discussion on the results of the ANN that shows to increase the practical efficiency responses.

After these changes and inclusions, the authors can redraw the conclusions to correspond and answer the initial questions and goals. then, it is possible to consider this document for a formal review and later considerations for publication.