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"

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Potential competing interests: No potential competing interests to declare.

The article focuses on an important topic of optimizing machining parameters like material removal rate (MRR) and tool wear rate (TWR) in the milling process. This can help reduce manufacturing costs and improve productivity. The authors use a good mix of experimental and modelling techniques including response surface methodology (RSM), artificial neural networks (ANN) and adaptive neuro-fuzzy inference system (ANFIS) to model and optimize MRR and TWR. Using multiple modelling techniques provides rigor. A central composite design (CCD) based experimental plan is used to generate data for modelling. CCD is an efficient design for developing empirical models. The models are evaluated well using statistical performance measures like R-squared, RMSE, MAPE etc. ANFIS gives the best performance amongst the three modelling techniques. The process parameters are optimized successfully using the RSM model to maximize MRR and minimize TWR. The optimized parameters are validated experimentally. The article is well structured with appropriate sections like introduction, materials and methods, results & discussion, and conclusion. The language and presentation are satisfactory. Based on my review, here are some potential weaknesses in each section of the article, and should be improved:

1. Abstract:

- Does not highlight major findings and optimized parameters
- Can be made more informative

1. Introduction:

- Does not provide enough context/background on the problem
- Importance of optimizing MRR and TWR not emphasized sufficiently

1. Materials and Methods:

- More details needed on the experimental setup and milling process
- Theories behind modelling techniques not explained

1. Results and Discussion:

- Some graphs are blurry and hard to interpret

- More discussion needed on comparative model performance

1. Conclusion:

- Conclusion is very brief
- Does not summarize key outcomes and learnings properly

1. Image Quality:

- Some images are blurry and pixilated like Figures 23-28. Using high resolution images would enhance clarity.
- Figures 5-7, 12-14 and 23-28 have very small font size which makes them hard to read when printed. Increasing the font size would help.
- Complex images like Figure 22 could be simplified to focus on only the key aspects.
- Appropriate legends could be added to graphs and images to make them more interpretable.
- The color scheme and background could be improved in some images for better visual appeal.

All the above modifications should be carried out before the article is recommended for publication.