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| Journal Name: | [**Journal of Engineering Research and Reports**](https://journaljerr.com/index.php/JERR) |
| Manuscript Number: | **Ms\_JERR\_133854** |
| Title of the Manuscript: | **Computational Analysis and Optimization of a Crab-Type MEMS Accelerometer for Wide-Range Acceleration Sensing** |
| Type of the Article | **Original Research Article** |

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| **PART 1: Comments** | | |
|  | **Reviewer’s comment**  **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | Accelerometers are capable of measuring acceleration, tilt, and vibration or shock, and, as a result, are used in a diverse range of applications from wearable fitness devices to industrial platform stabilization systems.  MEMS based accelerometers have already penetrated defense programs including navigation controlling addition to their usual deployment in automotive, consumer and industrial markets because of their improved reliability, accuracy and excellent price performance.  As the Crab-Type MEMS accelerometer exhibits high sensitivity, stable frequency response, and strong shock resistance, making it ideal for precision sensing applications in aerospace, automotive and healthcare. | We certainly agree with the esteemed reviewer about the importance of MEMS accelerometer in industry wide usage. MEMS Accelerometer finds it place in places where high precision and accuracy is required, in sectors like aerospace, healthcare, defense, and automotive. The research paper presents a design modification for optimal use-case of the accelerometer. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Alternative title: Real time Analysis of of a Crab-Type MEMS Accelerometer for Wide-Range Acceleration Sensing | We humbly thank the reviewer for presenting an alternative title to the paper, however, it changes the focus of the study from theoretical & computational perspective to experimental & real-time analysis. Our study consists of numerical and finite element analysis, but lacks an experimental setup. Hence, changing the title to the proposed one might not show the real intent and scope of the study. |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | Yes the abstract of the title is Comprehensive. | Thank you for your kind gesture. |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript is scientifically correct as there is detailed stable operation of accelerometer that ensures stable operation under high impact conditions making it suitable for consumer applications to aerospace, automotive and healthcare. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Need to add more references and also the references which are included in the manuscript are published below 2010. Not a single reference is from above 2020.Hence latest published references need to be added. Here are some example references.   1. [Highly Reliable Multicomponent MEMS Sensor for Predictive Maintenance Management of Rolling](https://www.mdpi.com/2072-666X/14/2/376) [Bearings;](https://www.mdpi.com/2072-666X/14/2/376) Elia Landi**,**Andrea Prato**,**Ada Fort**,**Marco Mugnaini**,**Valerio Vignoli**,**Alessio Facello**,**Fabrizio Mazzoleni**,**Michele Murgia **and**Alessandro Schiavi   Micromachines 2023, 14(2), 376; [https://doi.org/10.3390/mi14020376 - 2 Feb 2023.](https://doi.org/10.3390/mi14020376 -%202%20Feb%202023)   1. M. S. Golovinskiy, S. M. Kruchinin, A. S. Musatkin, M. M. Burakov and P. A. Gornostaev, "Technological Design of the MEMS-Accelerometer Sensor Element for Ultra-Large Acceleration Ranges," 2020 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), St. Petersburg and Moscow, Russia, 2020, pp. 2135-2138, doi: 10.1109/EIConRus49466.2020.9039038. 2. Design and simulation of dual-axis MEMS accelerometer, Materials Today: Proceedings, [https://doi.org/10.1016/j.matpr.2023.05.569,](https://doi.org/10.1016/j.matpr.2023.05.569) 2022. | We express our deep gratitude to the esteemed reviewer for suggesting an important addition to the paper, helping it stay more relevant with recent studies. We are also thankful to the reviewer for providing three references along with the suggestion, thereby assisting the authors to add similar research work in the references. The changes have been successfully made to the paper. |
| **Is the language/English quality of the article suitable for scholarly communications?** | Yes the article is suitable for scholarly communications. |  |
| **Optional/General** comments | 1. **Equation numbering is not given from sections 3.3.1 onwards.** 2. **All the references should be updates as there were very old. New published articles should be considered for references.** 3. **slight corrections in Figure numbering. (Figure 4, Figure 5 and First 3 figures is mentioned in the text as figure 1, figure 2, figure 3).** | We are humbled by the esteemed reviewer for providing such great insights about our manuscript, and we are happy to accommodate all the changes suggested. Following are the details of the same:   1. Apologies for the error, we have included equation numbers in front of all the major and important equations. However, the intermediate equations have not been numbered. 2. We are thankful to the reviewer for suggesting this change, and at the same time help us provide new published articles. We have accommodated the change in the revised manuscript. 3. As per our best knowledge, we have tried to correct the figure numberings. |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in detail)*  No | We thank the reviewer for his able guidance and invaluable feedback provided on our manuscript. We hope that our paper satisfies all the parameters through the revised manuscript. |