

COVER LETTER

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[30-01-2025]

Dear,

I/We wish to submit an original research article entitled “**An FFT-Based Vibration Characterization on Road Profile of Two-Wheeler Electric Vehicle**” for consideration by SINERGI.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. We promise not to withdraw this article after it has been processed by the Editorial Team. If there is a withdrawal, we are willing to pay a penalty of USD 150 (IDR 2000K) to the SINERGI Editorial Team.

In this paper, I/we report on / show that:

Field	:	Electric Vehicle
Topic	:	Vibration
Brief Background	:	Vibration can be defined as a disturbance to a moving structure. In practice, the certification of automotive products, specifically electric vehicles, will be determined by a vibration test. Previous research has demonstrated that vibration significantly degrades electrical and mechanical performance. However, the effect of vibration characterization on electric vehicles has not been previously investigated.
Research Problem	:	The objective of this research is to ascertain the magnitude of acceleration within the specified frequency range. This research constitutes a scale-up of prior research focusing on vibration research conducted on the table shaker.
Overview of Method	:	The research was conducted by affixing an accelerometer to the battery pack body in a parallel orientation to its axis. The accelerometer, which was connected to a portable vibration analyzer, recorded vibration data, particularly FFT graphs. The experiment was conducted on a 125-meter-long road track that exhibited a high level of damage, including potholes,

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		cracked concrete, and uneven roads.
Significant finding	:	In this study, we obtained FFT graph plots for the 10 and 15 km/h speed experiments, which revealed a magnitude of approximately 2 G at a frequency of 7 Hz for a frequency range of 0-200 Hz. This frequency range was selected because it is within the certification frequency range for electric vehicle products, which is typically determined through vibration testing. It is noteworthy that the magnitude of 2G is significantly lower than the vibration excitation levels attained on the shaker table, which can reach up to 8G.

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.

Sincerely,
Mohamad Ardy Firmansyah



AUTHORSHIP STATEMENT

I/We wish to submit an original research article entitled “**An FFT-Based Vibration Characterization on Road Profile of Two-Wheeler Electric Vehicle**” for consideration by SINERGI.

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

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Please submit 3 (three) potential reviewers (*that have not listed in SINERGI*) to speed up the review process that competent for the topic and has a good reputation in that area.

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