**COVER LETTER**

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09 March 2022

Dear Editors,

We wish to submit an original research article entitled **“****Finite Element Analysis on Ballistic Impact Performance of Multi-layered Bulletproof Vest Impacted by 9 mm Bullet”** 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.

In this paper, we report on:

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| Topic | : | Ballistic Behavior of Bullet Proof Vest |
| Brief Background | : | Simulation is a powerful tool to reduce the cost and time to test the quality of a bulletproof vest. The widely applied method to predict the behavior of the materials is macro-homogeneous model which considers the composite sheet as a homogenous layer.  |
| Research Problem | : | Despite its benefit in the computational cost, the macro-homogeneous model has some issues with accuracy.  |
| Overview of Method | : | This work presents FEM analysis with both macro-homogeneous and meso-heterogeneous models to predict the behavior of the Kevlar composites during ballistic impact, and qualitatively compared the simulation and the experimental results. |
| Significant finding | : | The meso-heterogeneous model successfully produced more detailed damage than the macro-homogenous model. The deformation of the Kevlar, the bullet, and the steel plate were close to the experiment results. |

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.

Sincerely,

Azhari Sastranegara

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**AUTHORSHIP STATEMENT**

We wish to submit an original research article entitled “**Finite Element Analysis on Ballistic Impact Performance of Multi-layered Bulletproof Vest Impacted by 9 mm Bullet**” 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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**POTENTIAL REVIEWERS**

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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