

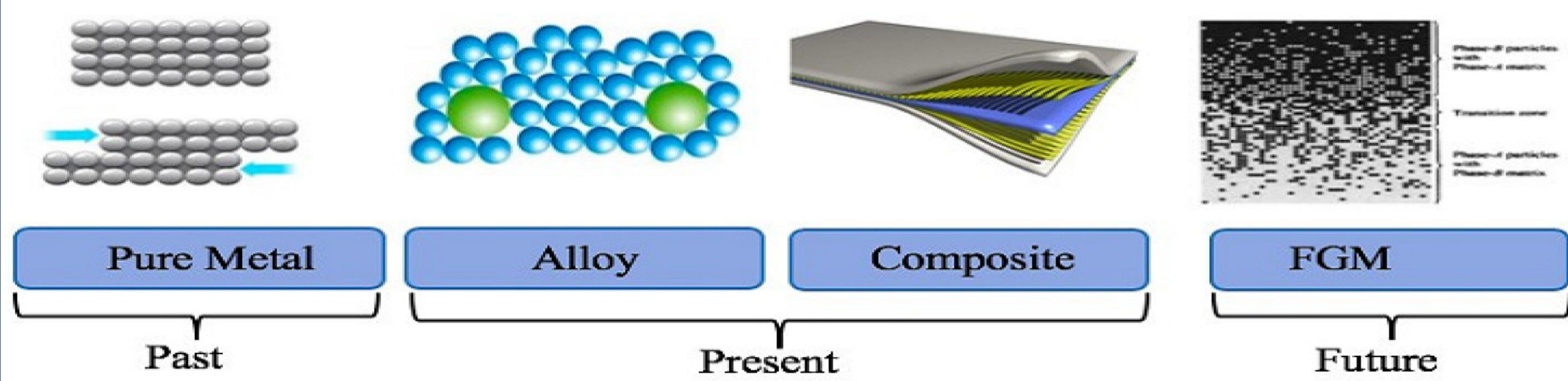
# Investigation of ballistic behavior of functionally graded sandwich structures

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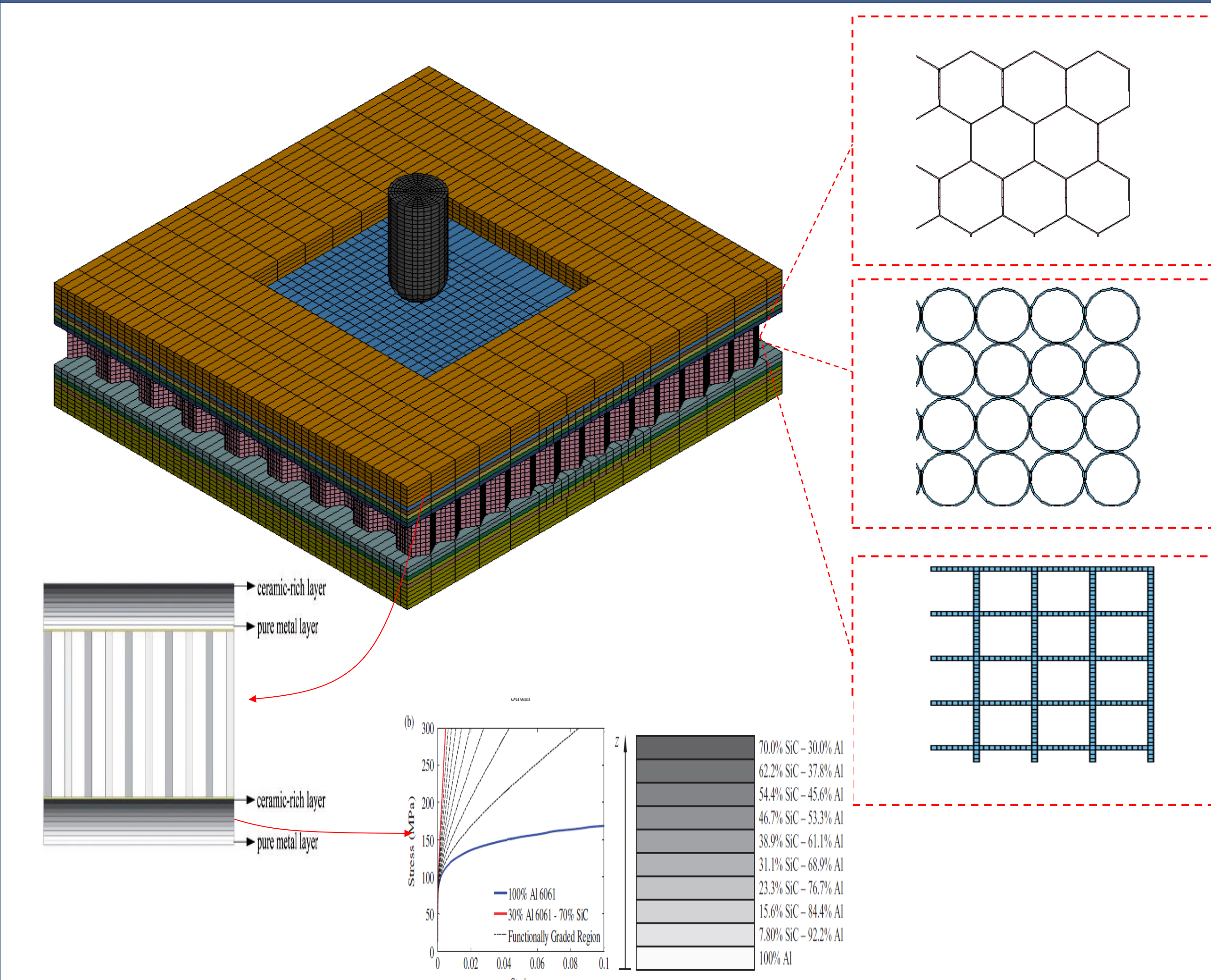
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## Introduction



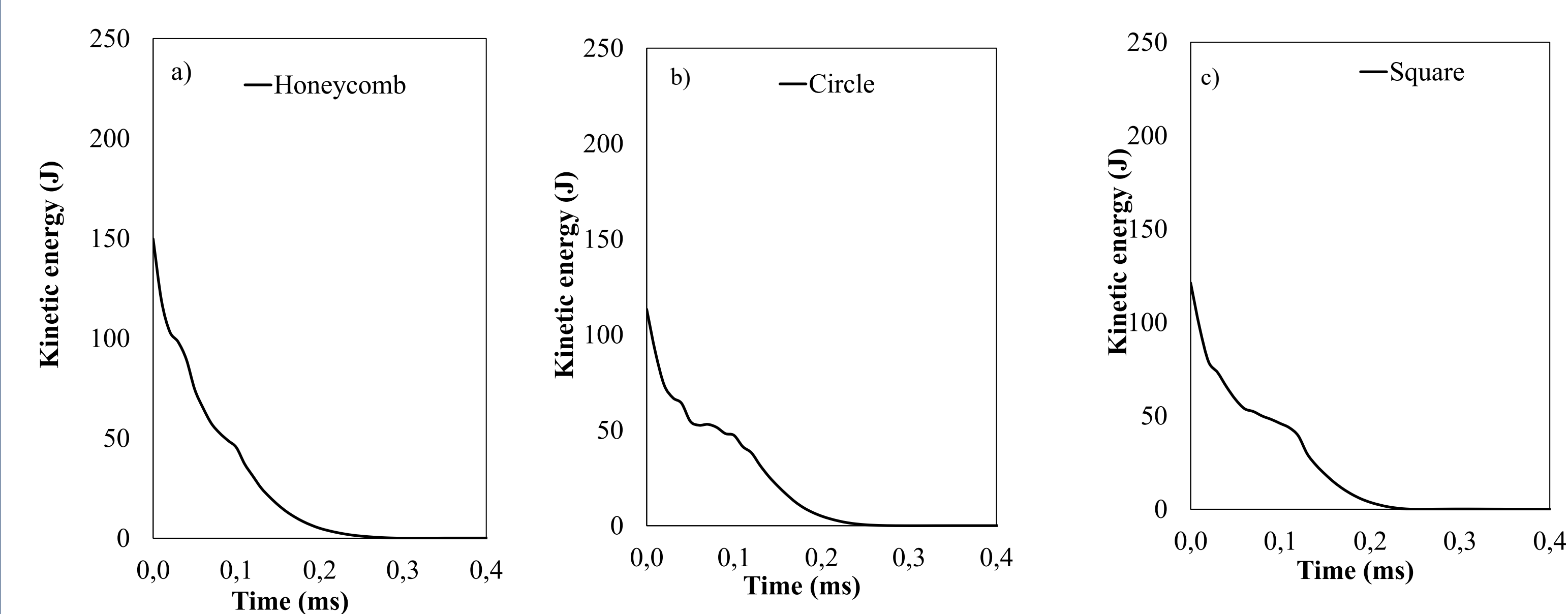
Functionally Graded Material (FGM) face sheets for ballistic applications provide increased resistance to penetration. The ceramic surface of FGM provides ballistic resistance and the aluminum core absorbs impact energy. In this study, the ballistic impact behavior of the sandwich structure consisting of aluminum honeycomb and Al/SiC functionally graded surface sheets is numerically investigated.

## Methods

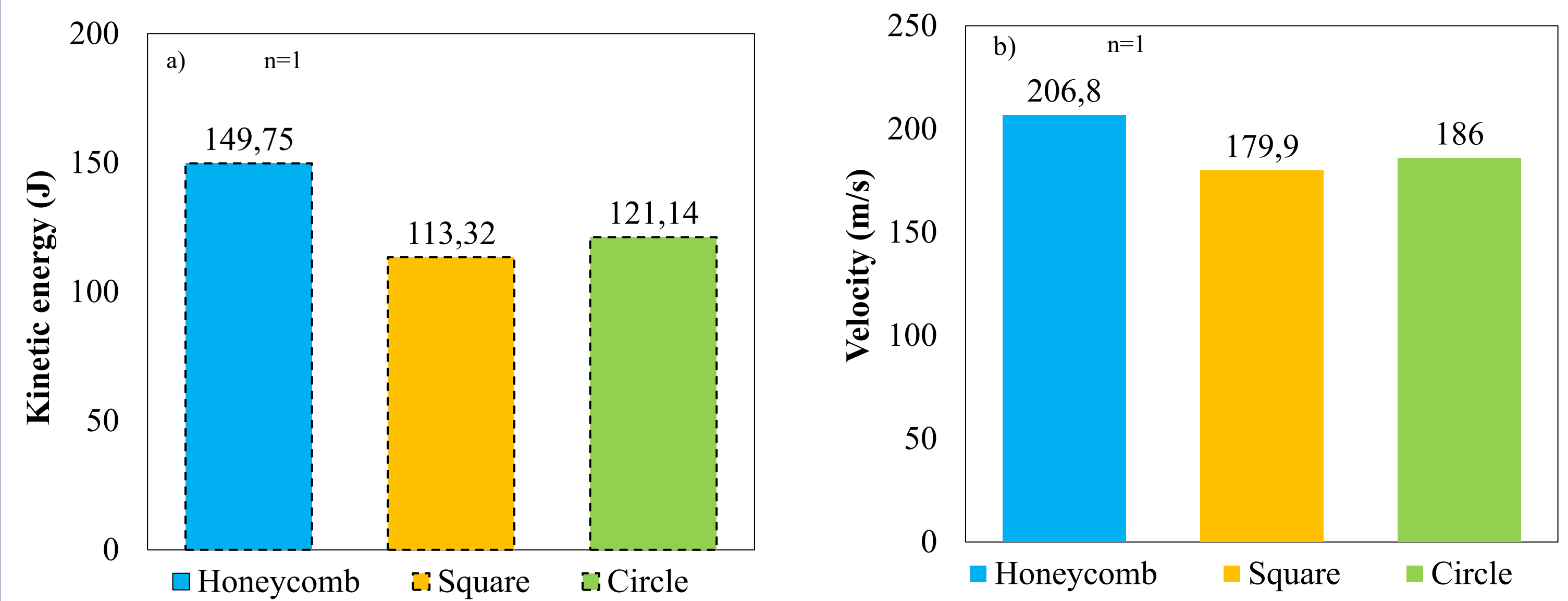


➤ Fig1. FE model of sandwich structures

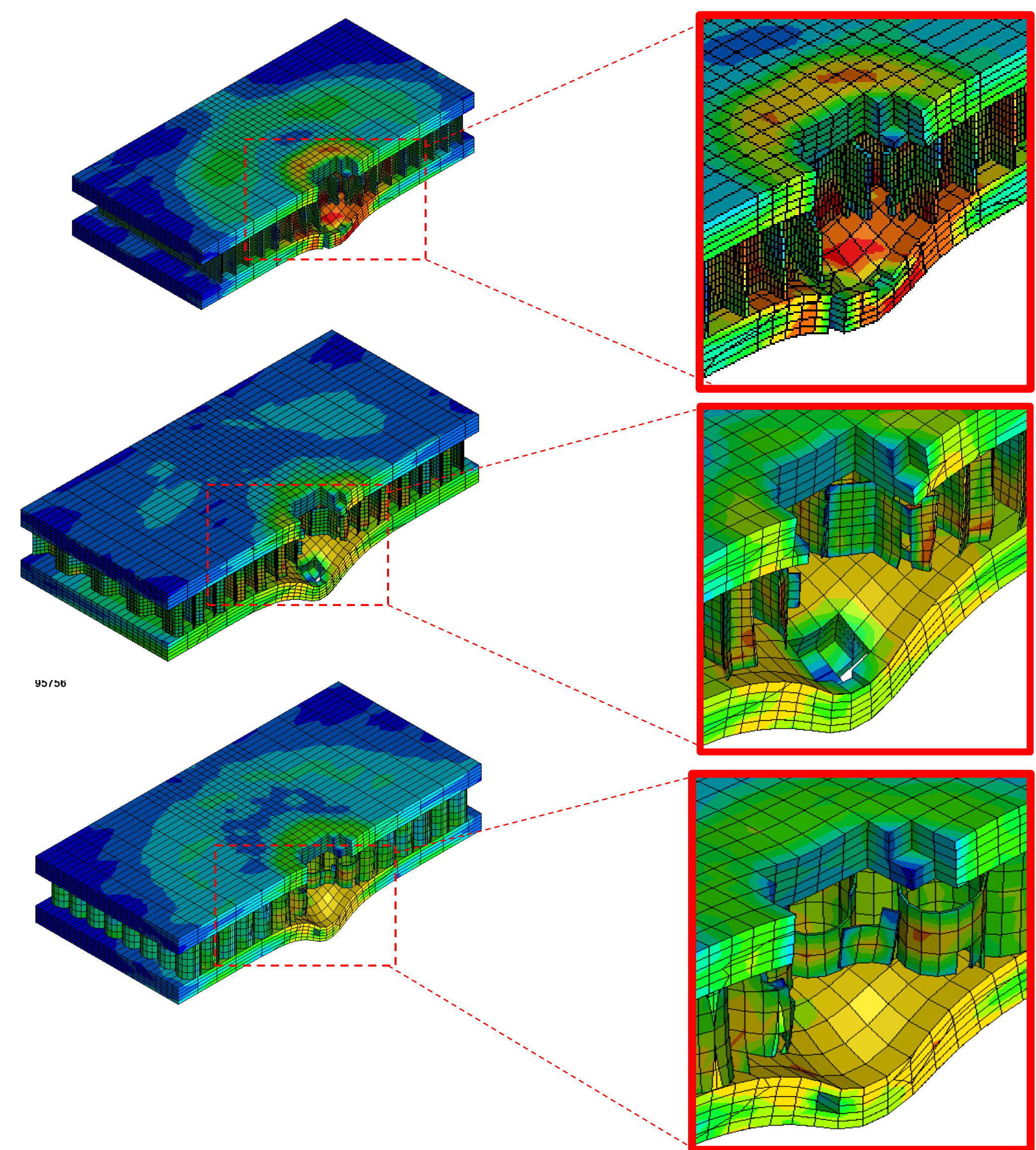
## Graphics / Images



➤ Fig2. KE results for different core

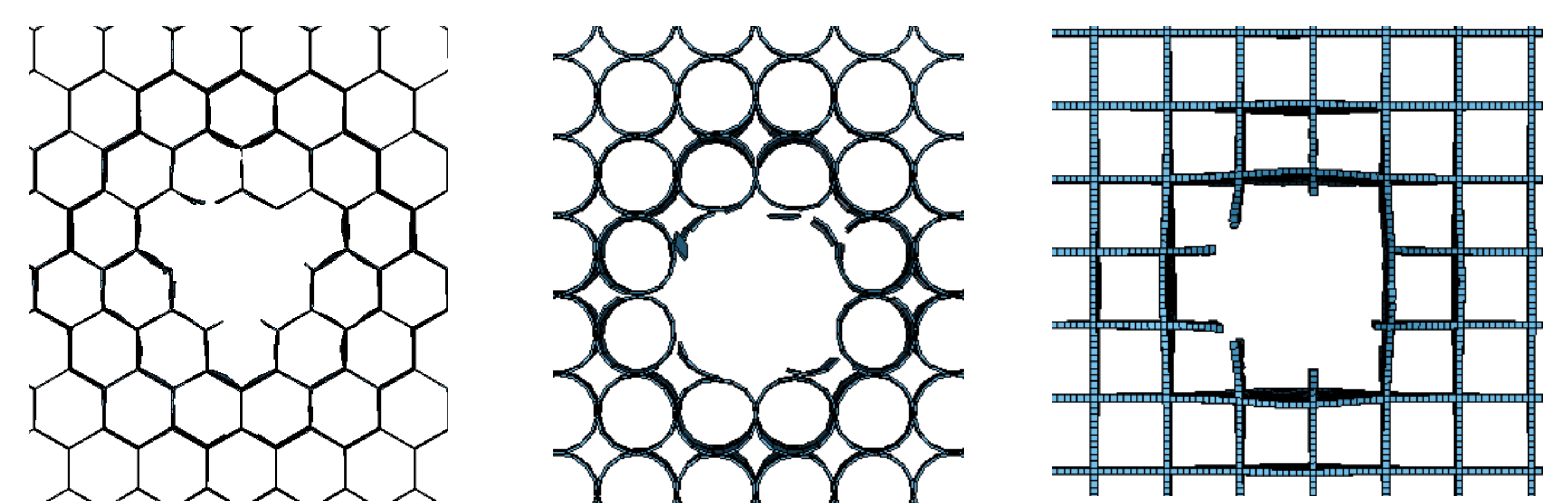


➤ Fig3. Kinetic energy and velocity results



➤ Fig4. FE model results a)honeycomb, b) square and c) circle core

## Conclusions



➤ Fig5. Damage results a)honeycomb, b) square and c) circle core

In this study, the ballistic impact behavior of the sandwich structure consisting of aluminum honeycomb and Al/SiC functionally graded surface sheets was investigated numerically. When the minimum perforation energies were compared, they were determined as 149.75 J, 113.32 J and 121.14 J for honeycomb, square and circle core, respectively. It is understood that the core structure is an important parameter in ballistic studies.