

SPACE DEBRIS SYMPOSIUM (A6)
Interactive Presentations (IP)

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HYPERVELOCITY IMPACT SIMULATION OF DESIGNED MICRO STRUCTURE CORE
SANDWICH PANEL USING SPH**Abstract**

Honeycomb sandwich panel is an attractive option for designing a satellite. However, a honeycomb sandwich panel has vulnerable characteristic of a hypervelocity impact of M/OD, Micrometeoroid Orbital Debris. Because of channeling effect, honeycomb sandwich panel causes concentration of debris cloud when impacted by hypervelocity M/OD. This channeling effect makes rear face sheet of honeycomb sandwich structure easy to be penetrated. It is well known channeling effect can be alleviated by multiple face sheet layers of double honeycomb sandwich structure. However, this research newly introduces anti-channeling effect of combined two honeycomb sandwich panels as each center of cores are crossed. The energy of debris cloud can be effectively diminished by wall of honeycomb cell of anti-channeling double honeycomb sandwich structures. SPH, Smooth Particle Hydrodynamic, simulation explains the working mechanism of anti-channeling double honeycomb sandwich panel system.