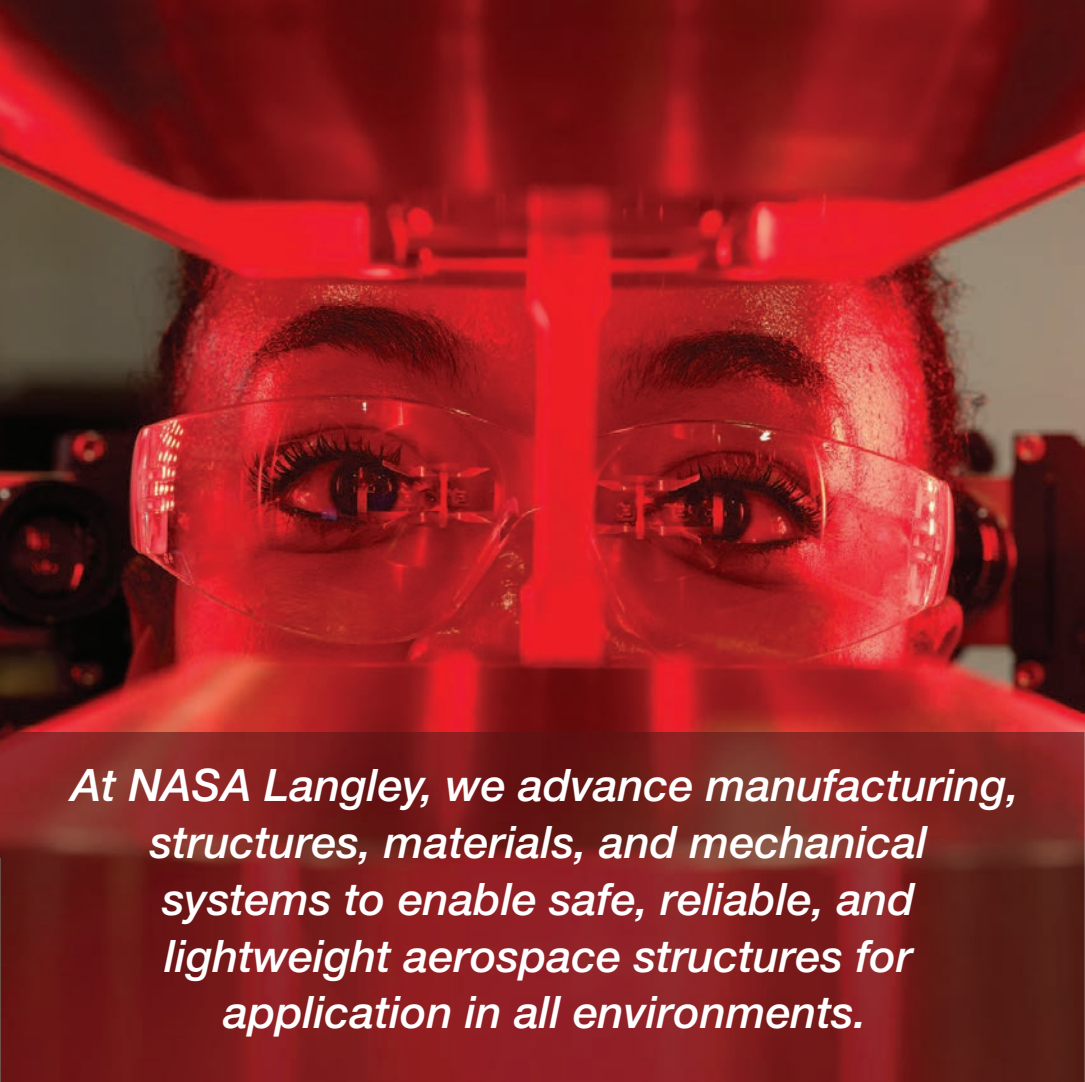


STRUCTURES AND MATERIALS

NASA's Langley Research Center

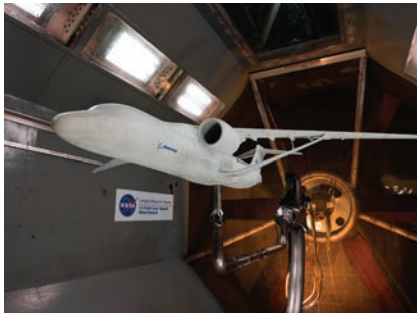


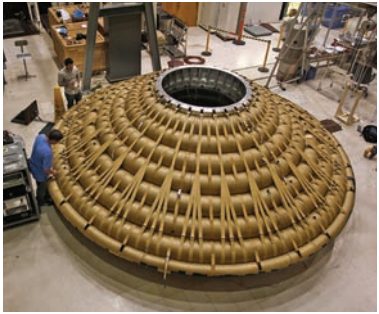
At NASA Langley, we advance manufacturing, structures, materials, and mechanical systems to enable safe, reliable, and lightweight aerospace structures for application in all environments.



Researchers at Langley played a key role in designing, developing, testing, and evaluating the Advanced Composite Solar Sail System (AC3), which is now in low Earth orbit. This solar sail harnesses sunlight for propulsion, eliminating the need for rocket fuel and paving the way for future deep space exploration.

Researchers at Langley are investigating new aircraft configurations, to include the Transonic Truss-Braced Wing (TTBW). Thin-wing structures, including aeroelastically-tailored composites, are in development to support future sustainable aircraft initiatives.

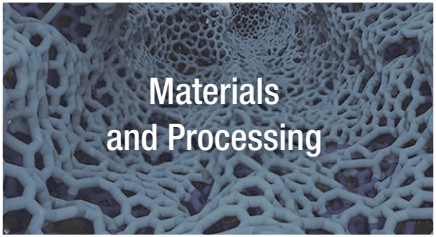


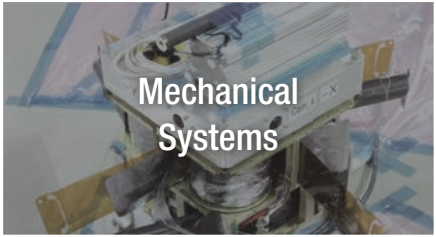


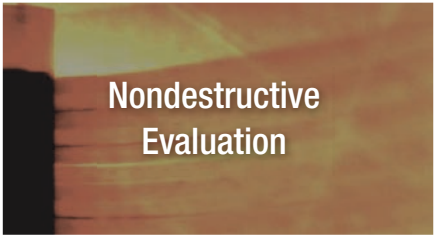
The Low-Earth Orbit Flight Test of an Inflatable Decelerator (LOFTID) demonstrated a cross-cutting aeroshell — a type of heat shield — for atmospheric re-entry. The results of the successful demonstration will inform future designs for inflatable heat shields that could be used to land heavier payloads on worlds with atmospheres, including Mars, Venus, Saturn's moon Titan, and Earth.


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