

FOR IMMEDIATE RELEASE

NASA contract leads the way for metamaterials in space

Accelerated aging in low-Earth orbit assists in predicting metamaterial performance

WORCESTER, Mass. (May 14, 2021) – Multiscale Systems, Inc. has been selected as a [2021 NASA Small Business Innovation Research \(SBIR\) Program Phase I](#) recipient. The contract is for preparation of lightweight, high-strength mechanical metamaterials for accelerated aging in low-Earth orbit (LEO).

LEO placement quickens the aging process of materials, and offers a window into the future of how products perform over time. Being able to quantitatively predict the expected lifetime of mechanical metamaterials will have a broad impact on the commercialization of this advanced materials technology.

"Working with NASA on another SBIR program is amazing," said Jesse Silverberg, CEO and Research Director of Multiscale Systems. "We'll be laying the groundwork for a Phase II where we'll send our technology into space - it doesn't get much cooler than that."

Multiscale Systems is part of a cohort of 365 small businesses chosen for the 2021 NASA SBIR/STTR Phase I Program. In total, \$45 million will be invested in these companies, with up to \$125,000 distributed to each contract awardee.

Phase I consists of six months of necessary on-ground preliminary work in the design, fabrication, and characterization of mechanical metamaterial samples.

Once a small business is awarded a Phase I contract, it becomes eligible to apply for a Phase II. If granted a Phase II, mechanical metamaterial samples will be placed in LEO on the International Space Station for a period of six to 12 months, then characterized and compared to ground-based controls to quantify base material and metamaterial property degradation.

Space-based applications for lightweight, high strength mechanical metamaterials include lunar rover technologies and materials-based solutions for physical protection during planetary exploration.

Commercial applications include lightweight structural materials for future mobility, advanced materials for defense, vehicle armor, and low-cost durable components for [CubeSat](#) systems.

In 2019, [Multiscale Systems was awarded a Phase I SBIR from NASA](#) (followed by a Phase II in 2020) for work on ultra-lightweight mechanical metamaterials for mitigating impacts and crashes of urban air mobility (UAM) vehicles.



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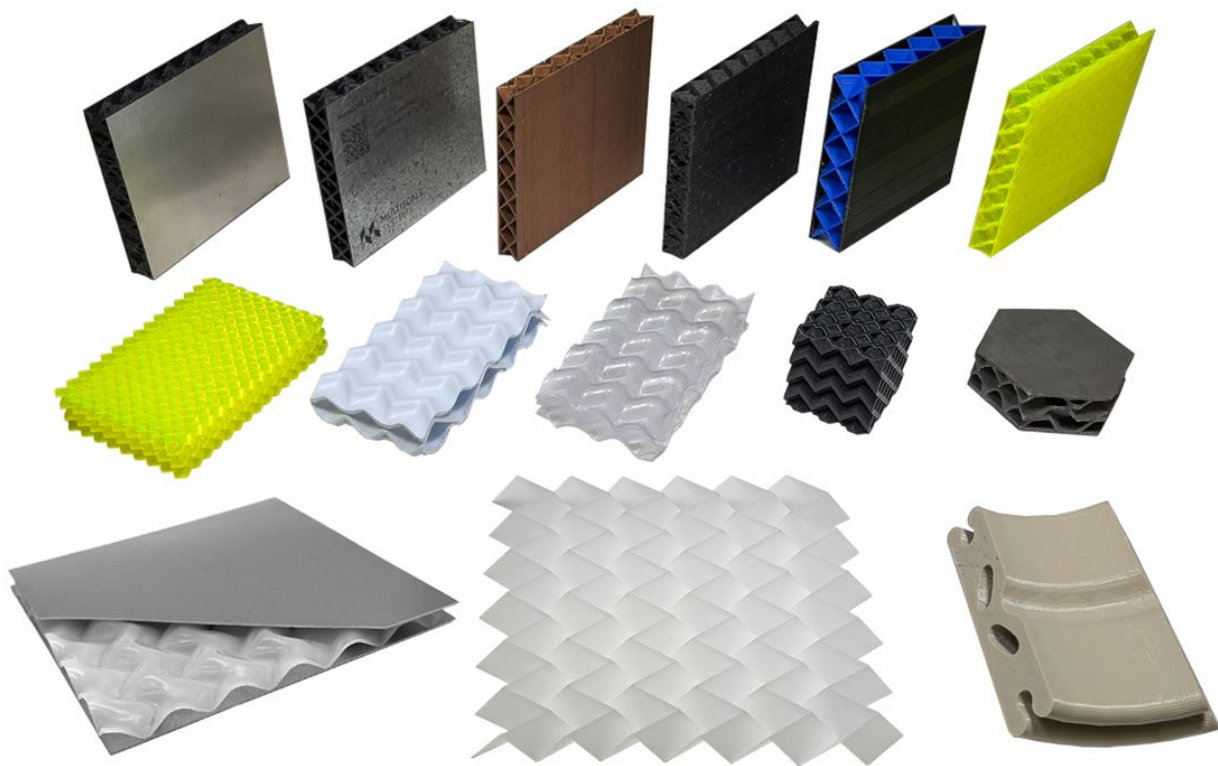


Photo: a selection of mechanical metamaterial prototypes.

About Multiscale Systems: Multiscale Systems is an advanced materials firm developing commercial applications of mechanical metamaterial technology. Our novel approach embeds geometric patterns into conventional materials to create new and improved functionality.

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Resources:

NASA press release: <https://www.nasa.gov/press-release/nasa-provides-45m-boost-to-us-small-businesses>

NASA list of selected companies: https://sbir.nasa.gov/selection_press_rel/node/66868

Multiscale Systems' 2019 NASA Phase I press release: [Multiscale Systems, Inc. receives NASA contract to develop advanced materials in Worcester, MA](#)