

# Researchers develop new process to manufacture extreme heat-resistant carbon-carbon composites

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ORNL researchers developed a novel process for manufacturing extreme heat resistant carbon-carbon composites at a faster rate and produced fins or strakes made of the materials for testing on a U.S. Navy rocket launching with NASA. Credit: ORNL, U.S. Dept. of Energy

Oak Ridge National Laboratory researchers have developed a novel process to manufacture extreme heat-resistant carbon-carbon composites at a faster rate. The performance of these materials will be tested in a U.S. Navy rocket that NASA will launch this fall.

Made of graphite reinforced with [carbon](#) fiber, the composites use a pure graphite matrix instead of epoxy to bind the fibers. Researchers

manufactured a nose cone and fins embedded with temperature sensors for the launch, which is designed to expose the material to the harsh environment of high-speed flight.

"This launch will allow us to collect data and characterize the temperature performance in extreme environments, which are difficult to reproduce in a laboratory at full scale," ORNL's James Klett said.

"The nose cone and fins were produced using a method that significantly cut production time."



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Provided by Oak Ridge National Laboratory

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