

Contact Information to Engage the Carbon Fiber Technology Facility and Affiliated Capabilities

The Carbon Fiber Technology Facility is operated by the Oak Ridge National Laboratory (ORNL).

General Information and Management Engagement:

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Carbon Fiber Technology Facility (CFTF)

The Carbon Fiber Technology Facility, established in 2013, is the Department of Energy's only designated user facility for carbon fiber innovation. The CFTF, a 42,000 sq. ft. facility, provides a platform for identifying high-potential, low-cost raw materials including textile, lignin, polymer and hydrocarbon-based precursors. Using the CFTF, ORNL is developing optimal mechanical properties for carbon fiber material, focusing on structure property and process optimization.

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<https://www.ornl.gov/facility/cftf>

Carbon and Composites Research Capabilities

The Oak Ridge National Laboratory's Carbon and Composites Group capabilities include: polymeric and carbon fiber manufacturing; rheology of reinforced polymers and their interfacial engineering and processing; reactive extrusion; polymer synthesis and modifications; multi-functional composites and sensors; multi-material composites; development of fiber sizing and wet filament winding; molecular dynamics and DFT-based predictive simulations of materials; bench-scale composite prototyping; interactions of polymers—gaseous fluid systems and barrier properties of polymers; and value-added sustainable materials/composites from domestic and industrial waste/byproducts. Comprehensive capabilities include modeling-based materials design; fiber spinning and thermochemical processing of fibers; thermal, rheological, mechanical, and structural characterization of materials; and early-stage development, evaluation, and technology transfer.

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Manufacturing Demonstration Facility

The Manufacturing Demonstration Facility (MDF) performs early-stage research and development to improve the energy and material efficiency, productivity, and competitiveness of American manufacturers. Research focuses on manufacturing analysis and simulation, composites and polymer systems, metrology and characterization, machine tooling, filament winding, large-scale polymer composite additive manufacturing systems, and robotics and automation.

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<https://www.ornl.gov/facility/mdf>

High Performance Computing Capabilities

The Oak Ridge Leadership Computing Facility is charged with helping researchers solve some of the world's most challenging scientific problems with a combination of world-class high-performance computing (HPC) resources and world-class expertise in scientific computing. The facilities can be engaged for HPC-based simulation of advanced materials and manufacturing processes.

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