

NASA Langley Research Center Capabilities – Advanced Manufacturing –

NASA Langley Research Center (LaRC) is aiming to rapidly translate new technologies in advanced manufacturing from our laboratories back to the factory floor. You want your organization to be more energy and resource efficient. To do that, you need to improve your processes by integrating new technologies and techniques. LaRC houses many advanced manufacturing technologies and capabilities that may help you succeed.

LaRC Capabilities:

- **Composites:** Langley has the capability to manufacture composite test articles ranging from unmanned aerial systems, rovers, habitats, wind tunnel models, and composite heatshield carrier structures along with instrumentation.
- **ISSAC:** The Integrated Structural Assembly of Advanced Composites (ISSAC) system is a state-of-art composites research capability located at NASA Langley Research Center. This flexible and adaptable system has the ability to switch between different process heads making it an ideal research platform that scales directly to aerospace industry practice. While focused on technology development, ISAAC can span the full spectrum from basic research to flight systems.
- **Additive Manufacturing:** Langley has extensive knowledge and expertise to create test articles, components and hardware from a full suite of additive manufacturing systems including plastics, resins, metals, and wax.
- **Electron Beam Freeform Fabrication (EBF³):** Langley has worked extensively on the development of a layer-additive process to build near-net shape parts directly from CAD
 - Ground-based systems for large structural components
 - Portable systems for In-space simulation experiments
- **Near net Shape:** Researchers at Langley are investigating innovative metals processing which will reduce cost and weight of aerospace structures.
- **Nanotechnology:** Langley researchers are take the multidisciplinary approach to accelerate maturation of lightweight structural carbon nanotube composites. Capabilities spanning computational modeling, synthesis, characterization, processing, testing, design, and systems analysis are being employed to develop large-scale carbon nanotube composites with mechanical properties that compete with carbon fiber composites.

LaRC is seeking opportunities to further engage with the Advanced Manufacturing sector through participation in industry seminars, partnerships with industry or government organizations or site visits to specific companies. In addition, LaRC it is interested in partnering with outside organizations to share its broad engineering and research capabilities evolving from its primary space missions that to promote new domestic technologies and economic growth.

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