Manufacturing Demonstration Facility
Technology Collaborations for US Manufacturers in Advanced Manufacturing and Materials Technologies

Oak Ridge National Laboratory (ORNL) is seeking industry partners to participate in short-term, collaborative projects within the Manufacturing Demonstration Facility (MDF) to accelerate development of new energy efficient manufacturing technologies. This opportunity will provide selected participants access to ORNL's experienced staff and unique equipment and capabilities to demonstrate advanced concepts with intent to develop and deploy new manufacturing processes or materials in U.S. manufacturing industries.

Description

UT-Battelle, LLC, acting under its Prime Contract No. DE-AC05-00OR22725 with the U.S. Department of Energy (DOE) for the management and operation of the Oak Ridge National Laboratory, conducts research and development in support of the DOE Advanced Manufacturing Office (AMO). The DOE Advanced Manufacturing Office partners with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies with the potential to create high-quality domestic manufacturing jobs and enhance the global competitiveness of the United States.

ORNL is requesting cost-shared proposals from industry to assess applicability of new technologies that can reduce manufacturing energy intensity or produce new, energy-efficient products. As part of the technology collaborations conducted under this announcement, the proposer will describe the potential manufacturing and life cycle energy savings that may be realized by the targeted project. Projects that focus on advanced manufacturing and materials technologies for commercial applications related to additive manufacturing or carbon fiber and composites are preferred.

Projects will be conducted during a short-time period. At least 50% cost share, which can be funds-in to ORNL or in-kind contributions (e.g., facilities, services, and staff time), is required on the part of the industrial participant. Participant cost-share cannot be met using funds from U.S. Government sources. Funds will not be provided to the industrial participant by ORNL. **Note: THIS IS NOT A PROCUREMENT REQUEST.**

Eligibility

Eligibility is limited to industries that currently manufacture or process materials in the U.S. for commercial applications, or to industries that will be able to do so as a direct result of these collaborative efforts. There is no restriction based on a particular material system or manufacturing process; however projects should address advanced manufacturing and materials technologies in additive manufacturing or carbon fiber and composites.

Background

DOE's Manufacturing Demonstration Facility (MDF) at ORNL offers distinctive world-leading capabilities in manufacturing and materials research technologies and characterization facilities. The MDF provides a collaborative, shared infrastructure to help industry adopt energy efficient, rapid, and flexible manufacturing technologies to lower production cost, and create new products and opportunities for high-paying jobs. ORNL's expertise in material synthesis, characterization, and process technology will assist manufacturing industries in conducting assessments of new fabrication concepts and methods for improving existing technologies. The materials and processing technologies developed are expected to be deployed in new or existing manufacturing facilities. More information about the ORNL MDF can be found at: http://web.ornl.gov/sci/manufacturing/

From concept to commercialization, ORNL's world-leading facilities and expertise enable research focused on reducing the energy intensity of U.S. industry, supporting development of new products, and strengthening our nation's clean energy economy to meet the commercial and national security needs of tomorrow.

Objective

The objective of these MDF Technology Collaborations is to collaborate with industry to investigate, improve, and scale process methodology to reduce the risk and accelerate the development and deployment of innovative energy efficient manufacturing and materials technologies. Creation and preservation of domestic manufacturing jobs is a primary goal of this solicitation.

The primary focus of this announcement is to target projects that will impact the following technical areas:

- ***Additive manufacturing*** utilizing a broad range of direct manufacturing technologies for metal and polymer feedstocks using a variety of both established and innovative deposition systems and technologies.
- ***Carbon fiber and composites*** utilizing a broad range of carbon fiber synthesis, characterization, and compositing technologies from precursor evaluation through carbon fiber pilot scale production (25 metric tons/year) for low cost, lightweight, and higher-performance composite products incorporating carbon fibers and other material reinforcements.

In addition to the above mentioned high priority technology categories, projects with sufficient merit may be approved in the following lower priority categories:

- ***Lightweight metals processing*** using advanced synthesis and processing technologies for low-cost titanium alloys, magnesium alloys, and metal matrix composite products.
- ***Roll-to-roll processing*** using pulse thermal processing and other advanced processing technologies to develop low-cost manufacturing of flexible electronics, photovoltaics, energy storage systems, and other products.
- ***Batteries manufacturing*** innovative processing using ORNL’s unique prototyping materials and evaluation facility.

Laboratory Support

It is anticipated that industrial partners will work collaboratively with members of the MDF staff to conduct project activities across the various areas of expertise within the MDF.

Intellectual Property and Proprietary Data

Projects with the potential for the generation of intellectual property will be performed with a Cooperative Research and Development Agreement (CRADA) as the contract instrument. See the announcement package for a sample CRADA agreement. DOE and ORNL respect the importance of industry's intellectual property and data security while balancing the need to document the benefits of public expenditures. Provisions relating to proprietary information and intellectual property are set forth in the CRADA. A Non-Disclosure agreement (NDA), if required, can be put into place during development of the project to facilitate discussions while protecting the partner's proprietary information.

It is preferred that proprietary information NOT be included in the proposal. If company proprietary information is included in the proposal, the specific information should be marked as such, and UT-Battelle/ORNL will treat that information as business confidential.

Proposal Guidelines

Proposals should be completed using the attached template in the announcement package

Proposers are encouraged to consult with ORNL technical staff to develop a work scope that is technically feasible and compatible with ORNL facilities and capabilities.

Proposal Deadline and Submission

This solicitation will remain open subject to availability of funding from the DOE Advanced Manufacturing Office.

Completed proposals must be submitted in **PDF** file format by email to MDFcollaborations@ornl.gov. The subject line should include: ORNL MDF Technology Collaborations. Receipt of proposals will be confirmed within one week of submission.

Proposal Evaluation and Timeline

This is an open announcement. Selection of winning proposals will be at the discretion of the DOE AMO. Proposal evaluation criteria will include compatibility with ORNL facilities and capabilities, technical feasibility and merit, the potential to commercialize new products and create US jobs, and the potential for industrial energy savings. AMO and the MDF reserve the right to select all, a portion, or none of the submissions.

Point of Contact

All questions relating to this announcement should be directed to Dr. William Peter by email, peterwh@ornl.gov, or by phone, (865) 241-8113.

Cooperative Research and Development Agreement (CRADA) Information

Awardees are required to enter into a short-form CRADA with UT-Battelle. Because of the need for accelerated placement and execution of the projects, the most favorable terms allowable within DOE guidelines have been established and will not be subject to negotiation. Failure to enter into a CRADA in a timely manner will result in termination of further project consideration. CRADAs have provisions that address the protection of the partners' existing proprietary information and intellectual property, as well as the information and intellectual property generated and made during the collaboration. More specifically, each party owns its own inventions while jointly developed inventions will be jointly owned. In all cases, U.S. Government will retain government use rights. CRADA durations are expected to be at least one year.

For more specific terms and conditions, please review the model short-form CRADA attached to this announcement.