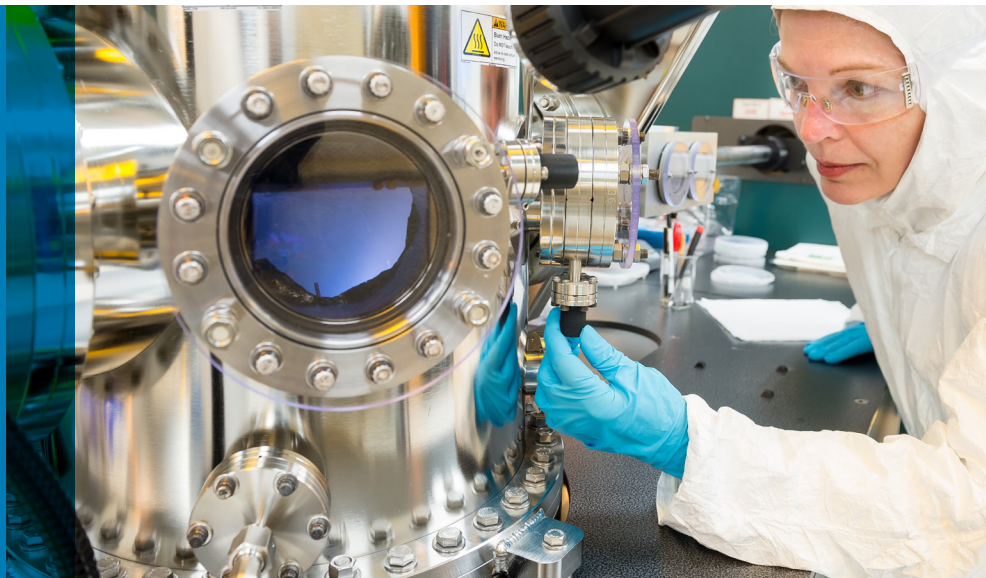


CENTER FOR NANOSCALE MATERIALS



We provide free access to leading-edge expertise, instruments and infrastructure for interdisciplinary nanoscience and nanotechnology research

The Center for Nanoscale Materials is one of five U.S. Department of Energy Office of Science Nanoscale Science Research Centers located across the nation.

The Center for Nanoscale Materials (CNM) — a U.S. Department of Energy Office of Science user facility — is located at Argonne National Laboratory, just 30 minutes from Chicago. Academic, industrial and international researchers can access the center through its user program for both proprietary and non-proprietary research. There is no cost to use the CNM if the research is intended for the public domain.

The CNM offers more than 100 tools and capabilities. From X-ray microscopy to cleanroom-based nanofabrication techniques, the CNM provides researchers with a powerful combination of scientific resources found nowhere else.

AREAS OF EXPERTISE

Electron and X-Ray Microscopy

We develop capabilities that go beyond off-the-shelf technology to identify, define and develop electron and X-ray microscopy needs including data science and new modalities such as ptychography.

Nanofabrication and Devices

We fabricate, integrate and manipulate nanostructures including incorporation — under cleanroom conditions — of elements that couple mechanical, optical and electrical signals to produce working nanofabricated structures.

Nanophotonics and Biofunctional Structures

We use ultra-fast spectroscopy and advanced microscopy to understand optical energy transduction and quantum sensing, and also create nature-inspired assemblies for energy conversion, transport and biosensing.

Theory and Modeling

We use molecular dynamics, electronic structure theory, quantum and electrodynamics, multi-scale modeling, machine-learning and data science to understand and predict nanoscale tribology, thermal and charge transport and quantum entanglement in hybrid plasmonic systems.

Quantum and Energy Materials

We design and study atomic-scale to meso-scale materials with implications for energy, the environment and coherent information transfer and sensing.

Access Multiple User Facilities at one Location

Users can also access Argonne's four other user facilities, including the Advanced Photon Source, Argonne Leadership Computing Facility, Argonne Tandem Linear Accelerator System and Atmospheric Radiation Measurement Facility, for multimodal and cross-functional projects.

Apply to Use the CNM

The CNM solicits brief proposals for user-initiated nanoscience and nanotechnology research projects three times per year. Applications are due in March, July and October.

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