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.

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**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.

**Contact**
CNM User Office
Phone: 630-252-6952
Email: cnm_useroffice@anl.gov
Facebook: www.facebook.com/CenterForNanoscaleMaterials
www.anl.gov/cnm

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