



# Institute for NANOSCIENCE

## FACILITIES

- Class 100 Clean Room
- 8 Quiet and 4 Ultra-quiet environmentally controlled lab modules
- Electron-beam lithography systems
- Optical lithography systems
- Direct-write optical lithography system
- 3D lithography system
- Multiple deposition, etch and ion mill systems
- Plasma-enhanced atomic layer deposition system
- Laser cutter
- FIB/SEM system
- Scanning Electron Microscopes
- Transmission Electron Microscopes
- He ion microscope
- Multiprobe STM Instrument Lab



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## ABOUT

Opened in 2003, the Institute for Nanoscience conducts innovative, multidisciplinary research at the intersections of the fields of materials, electronics, and biology in the nanometer size domain. The laboratory serves as NRL's nucleus of collaborative activity in this rapidly evolving research area. Current research programs emphasize cross-division efforts in such areas as quantum information technology, neuromorphic computing, nanophotonics, nanobiotechnology and energy technology.

The central core of this major facility is a 5,000 square-foot Class 100 fabrication clean room outfitted with tools to permit lithographic fabrication, measurement, and testing of devices. NRL S&Es are granted unlimited access to the facility,

which includes state-of-the-art deposition and etching tools, optical and e-beam lithography, 3-D lithography, FIB, TEM, SEM, etc. The facility is configured to accommodate a wide range of material systems.

The building also includes 5,000 square-foot of controlled-environment laboratory space (12 laboratories) available to NRL researchers whose experiments are sufficiently demanding to require this space. These laboratories all provide shielding from electromagnetic interference and very low floor vibration and acoustic levels. In addition, eight of the laboratories control the temperature to within 0.5 degrees Celsius and four to within 0.1 degrees Celsius.

