

National Nanotechnology Infrastructure Network Vol.1 # 2



A Periodic Newsletter of NNIN News and Announcements

Nov. 2005

NNIN

The National Nanotechnology Infrastructure Network consists of 13 nanotechnology user facilities at 13 major academic institutions. Funded by the National Science Foundation, our facilities are available to the national user community on an open basis. We provide accessible resources across the entire breadth of nanotechnology. To this end, each site has specialized areas of expertise within the network, ranging from biology and chemistry, to materials characterization and traditional microfabrication. Complete information on NNIN sites, resources and access is available via the web site at nnin.org

New NNIN Instruments and Capabilities

Over 900 major nanotechnology instruments are available to users at the 13 NNIN sites, offering thousands of individual processes. A complete searchable database of NNIN tools is available on the NNIN web site at http://www.nnin.org/nnin_tool.taf. A [process table](#) is also available for your reference. We encourage you to call or email to discuss specifics of any potential project with NNIN staff liaisons. If necessary, our staff will assist in defining your project and developing a process plan. Our facilities are open on a user basis without requirement to collaborate with local staff or faculty.

NNIN sites continue to make new capabilities available to users. Below is a list of some recent additions at selected NNIN Sites.

FEI Quanta 200 Dual Beam Minnesota has installed a new dual beam system, combining a scanning electron microscope and a focused ion beam. The instrument is particularly useful for sectioning and failure analysis.



FIB: The **University of Minnesota** has installed a dual beam focused ion scanning electron beam in one instrument. This instrument is particularly useful for sample

Xactix Xetch: The **Cornell University Nanoscale Science and Technology Facility** has installed a Xactix Xenon Difluoride etch system. This system produces an isotropic room temperature dry etch of silicon and is particularly useful for release of MEMS structures.

Zeiss LSM 510 Confocal Microscope: The **University of Washington** has recently installed a Zeiss LSM 510 Laser Scanning Confocal Microscope. This inverted microscope operates in both transmission and reflection modes.

Zeiss Supra 55VP and Ultra 55 SEMs: The **Cornell Nanoscale Science and Technology Facility** has completely upgraded its SEM inspection facilities with two new digital field emission electron microscopes. These instruments provide superior high resolution imaging capabilities to CNF users.



NNIN Upcoming Events

October was busy month for NNIN workshops. Seven major public events or workshops were held in October and early November. Details are available on the [events page](#) of the NNIN web site. Several more events are scheduled in the upcoming months.

Registration is open for the following events and activities. These events are open to NNIN users, potential users, and all others in the nanotech community. Additional information is available on these and other activities from the [Events page](#) of the NNIN web site

[Nanoscale Processes in the Earth and Planetary Science \(Workshop\) \(LINK\)](#)

Jan. 11-14, 2006 @ University of New Mexico: The goal of the workshop is to bring together researchers working on a wide range of processes that involve earth and planetary materials at the nanoscale as well as increase awareness of the facilities that are available for nanoscience research in the NNIN network.

[Technology and Characterization at the Nanoscale \(Laboratory Workshop\) \(LINK\)](#)

Jan. 18-20, 2006 @ Cornell University : This three day lecture and laboratory workshop will cover the basics of nanotechnology and nanocharacterization. This is the second offering of this popular event, first held in June 2006 with an attendance of 60 people. It is appropriate for users, potential users, and other professionals with an interest in learning about nanotechnology and nanofabrication.

[Nanointegrated Circuit Fabrication \(LINK\):](#)

Feb.15, 2006 @ the University of Texas : This one day workshop serves as an introduction to fabrication processes, with particular emphasis on the Imprio 100 Step and Flash instrument.

NNIN at Conferences

NNIN is active at the major technical meetings related to nanotechnology. We recently participated at the annual AVS meeting in Boston. We will be at the Fall APS meeting in Boston, as well as the Biophysical Society, the March APS meeting, and the spring MRS meeting. We will have a booth in the exhibitors' area staffed by NNIN technical staff, as well as technical presentations by staff and users. We encourage you to stop by and inquire about starting a nanotechnology project at one of the NNIN Sites.

NNIN Sites

- **Cornell Nanoscale Science and Technology Facility @ Cornell University**
- **Stanford Nanofabrication Facility @ Stanford University**
- **Microelectronics Research Laboratory @ Georgia Tech**
- **Michigan Nanofabrication Facility @ University of Michigan**
- **Center for Nanotechnology @ University of Washington**
- **Center for Nanoscale Education and Utilization @ Penn State University**
- **Nanotech @ UC Santa Barbara**
- **MinTech @ University of Minnesota**
- **Microelectronics Research Laboratory @ University of Texas**
- **Nanoscience @ University of New Mexico**
- **Center for Nanoscale Systems @ Harvard University**
- **Howard Nanoscale Science and Engineering Facility @ Howard University**
- **Triangle National Lithography Center @ NCSU (affiliate)**

Complete contact info is available via the NNIN Web site at <http://www.nnin.org>.

The NNIN newsletter will be sent approximately 10 times per year and will contain timely information on upcoming events and new NNIN resources and capabilities.