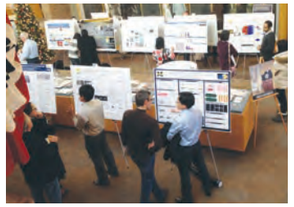
Workshops and Events

Professional Workshops

Technical sessions that cater to the interests and needs of the professional community. Experts present topics related to various research thrusts and associated process technologies currently available within the LNF. Lectures are accompanied by hands-on laboratory activities that benefit professionals from diverse backgrounds.



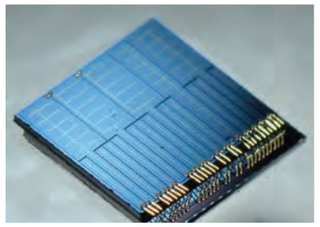
Community Events

Seminars and community events for academic and professional networking, outreach to the general public, and many more events including our annual LNF Users Symposium.

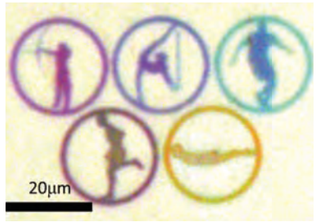
Prof. Euisik Yoon, Faculty Director

Dr. Sandrine Martin, Managing Director

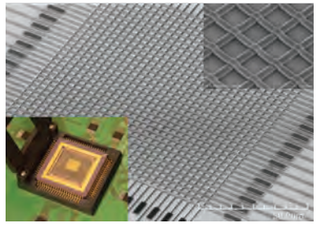
Transparent, superomniphobic micro-fabricated surface to repel all liquids.



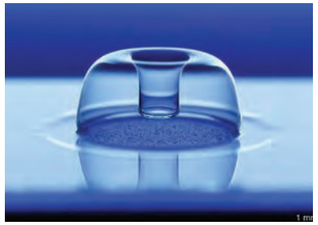
High-efficiency stackable AlGaAs photo-voltaics for indoor energy harvesting in mm-scale wireless sensor systems.



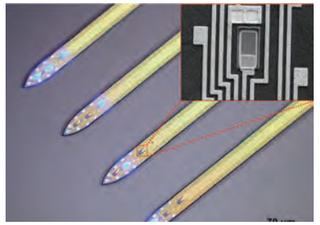
Structural colors and ultra-condensed images based on metallic nanocavities with 40 to 90nm-wide nanogrooves.



Crossbar array of metal oxide memristive devices (memristors) for neuromorphic applications.



Fused silica-based atomically smooth shell resonator for high-performance gyroscopes.



Monolithically integrated µLEDs on silicon neural probes for high-resolution optogenetics.

University of Michigan

Lurie Nanofabrication Facility (LNF)

Ann Arbor, MI 48109, info@LNF.umich.edu

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MICHIGAN ENGINEERING
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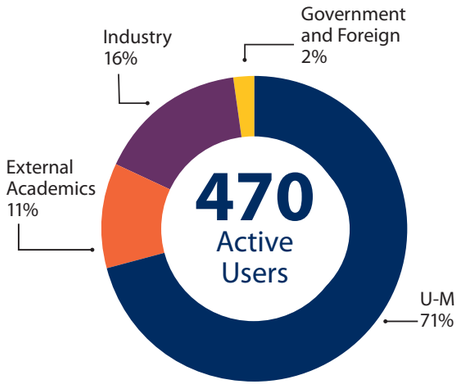
LNF Community



93 Internal Research Groups

53 Companies

23 Internal Departments

34 External Universities

70,000 Hours of Lab Usage

Benefits

Access to a world-class facility providing a broad set of technologies and processes, with technical support from process engineers and domain experts.

FREE project consultation for prospective users

FREE initial assistance from experienced process engineers and scientists

FREE safety and equipment training

FREE access to a web-based equipment reservation system

SHARED office space with internet access and CAD software

REDUCED capital investment necessary to initiate a research project

OWNERSHIP of intellectual property by users

The mission of the LNF is to provide effective, efficient, safe, and socially responsible access to advanced nanofabrication equipment and expertise thereby promoting, enabling, and encouraging cutting-edge education, research and business development from materials and individual process steps to entire systems.

LNF.umich.edu

Lurie Nanofabrication Facility: Your Resource to Enable Innovation

Complete Fabrication Capabilities:

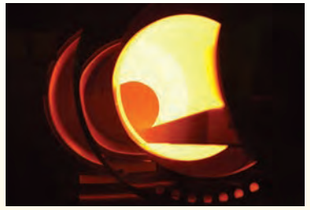
- More than 13,500 square feet (area under filter) of state-of-the-art class 10/100/1000 and 10,000 with up to 6" (150mm) processing capability and BioSafety Level II facility
- Comprehensive suite of tools that support:
  - General processing, Silicon, compound semiconductors, polymers, and other materials
  - MEMS, BioMEMS
  - Optoelectronics
  - CMOS, MEMS-CMOS integration
  - Microfluidics

Domain Experts for:

- General micro/nanofabrication
- MEMS, BioMEMS, integrated microsystems
- Nanophotonics, nanolithography
- Surface science, electrochemistry, material science

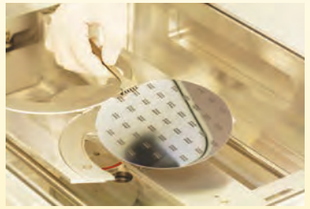
LNF Process Capabilities

Deposition and Growth
CVD, ALD, LPCVD, PECVD, PVD, Parylene Deposition



Lithography, Direct Writing and Mask Making
Optical Lithography, E-beam Lithography, Soft Lithography, Mask Making, InkJet Printing, Dip-Pen Nanolithography

Etching
RIE, DRIE, XeF2



Thermal Processing
Annealing, Oxidation, Doping and Diffusion

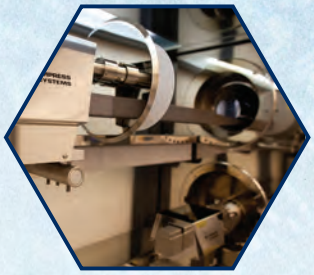
Chemical Processing
Wet Etching, Lift-Off, Electroplating

Metrology and Characterization
SEM, AFM, Profilometry, Microscopy (IR, Fluorescent), Ellipsometry, Reflectometry, EDS, µFTIR, 4-pointProbe, Film Stress, Contact Angle

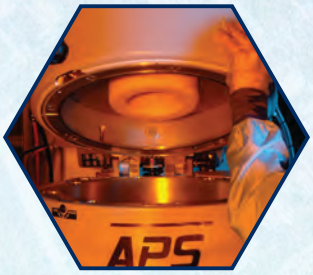
Packaging and Mechanical Finishing (BEOL)
Wafer Bonding, Dicing, Wire Bonding, Flip-Chip Bonding, Polishing, Lapping, CMP

Lurie Nanofabrication Facility

As a new faculty member at the University of Michigan, are you aware of the ways that the Lurie Nanofabrication Facility (LNF) can benefit your research program?

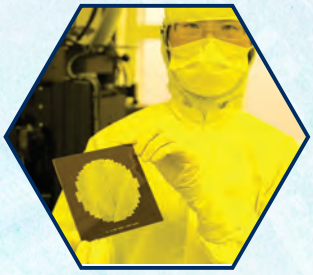


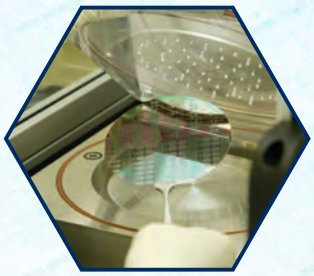
The LNF includes 11,000 sq.ft. of class 10/100/1000 space, plus 2,500 sq.ft. of quasi class 10,000 with a BioSafety Level 2 space, and provides not only outstanding process capabilities, but also highly experienced staff for training and technical support.



We offer flexibility in usage modalities from extensive lab usage, to users who may only need to perform a few key processes throughout the year, to process services performed by our staff engineers and scientists.

Email us to discuss your specific needs and how we can help. We look forward to working with you on high impact research and hope to hear from you soon!





LNF User Services Team
info@LNF.umich.edu

734-277-2365
www.LNF.umich.edu

LURIE NANOFABRICATION FACILITY
LNF
UNIVERSITY OF MICHIGAN

Lurie Nanofabrication Facility

E-beam Lithography

Microfluidics

Deep RIE

Packaging

Surface Science

Process Integration

Photonics

Thin Films

Direct Writing

Metrology

Wafer Bonding

Thermal Processes

Onsite Access

- Streamlined access procedure
- Users complete online safety training then work with our engineers and scientists on their project
- Independent usage, 24/7 access available

Process Services

Did you know that LNF can also provide process services? LNF staff members are available to help with your processing and meet your deadlines. See dedicated flyer or contact us for more details.

For more information:

www.LNF.umich.edu **info@LNF.umich.edu**

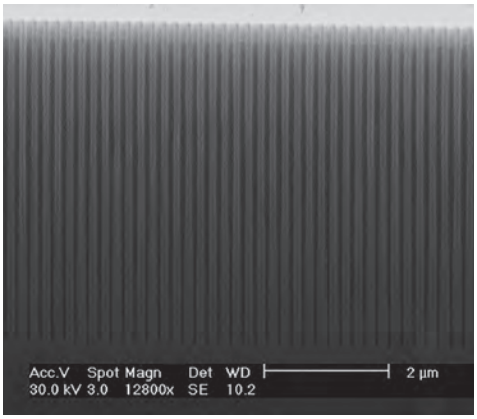
LNF-wiki.eecs.umich.edu

Lurie Nanofabrication Facility

Process Services

OVERVIEW

The University of Michigan Lurie Nanofabrication Facility (LNF) includes 11,000 sq. ft. of class 10/100/1000 cleanroom and 2,500 sq. ft. of quasi class 10,000 space with a BiosSafety Level 2 space. The LNF provides a wide range of fabrication and characterization capabilities and our highly experienced scientists and engineers are here to help you with your process needs. The LNF offers processing services to researchers unable to come to work onsite themselves.



Here are examples of services that we offer:

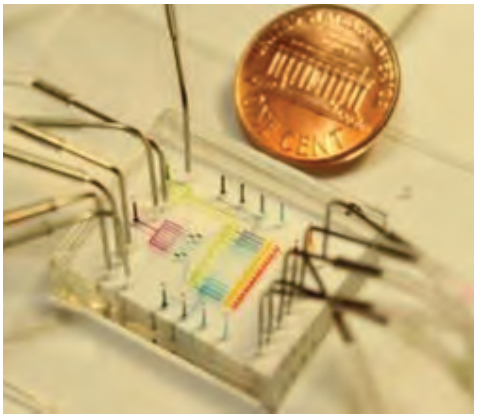
- E-beam lithography
- DRIE
- Wafer Bonding
- Thermal Processes
- Soft Lithography
- Analytical Services
- Thin Films

and many more!

See complete list of capabilities.

Lnf-wiki.eecs.umich.edu/

LNF.umich.edu info@LNF.umich.edu



LNF LURIE NANOFABRICATION FACILITY
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