



# WASHINGTON NANOFABRICATION FACILITY

The Washington Nanofabrication Facility (WNF) at the University of Washington is an open-access facility offering micro and nanofabrication equipment and processing expertise for basic and applied research, advanced R&D, prototype manufacturing and low-volume production.

## AT A GLANCE

- » 15,000 SQUARE FEET OF ISO CLASS 5-7 CLEANROOM AND LABORATORY SPACE
- » FULL SUITE OF FABRICATION TOOLS FOR DEPOSITION, ETCH, LITHOGRAPHY AND GENERAL PROCESSING OF WAFERS AND IRREGULAR SAMPLES
- » DEDICATED STAFF ON HAND TO TRAIN AND ASSIST USERS
- » EQUIPMENT AVAILABLE FOR USE WITH STAFF SUPPORT OR BY TRAINED USERS
- » 24/6 ACCESS TO EQUIPMENT

## HOW WE WORK

WNF staff help academic researchers and industry professionals looking to fabricate micro/nanoscale structures and devices. Our staff have years of experience in fabrication, design, and product development across a range of applicable fields.

Users have two options for carrying out projects at the WNF:

- 1) Onsite Work** – Trained users have access to WNF tools and processes to fabricate devices.
  - > All onsite users receive safety, protocol and equipment-specific training.
  - > Onsite users can take advantage of standard WNF processes or develop their own as needed.
- 2) Remote Work** – Users can utilize WNF staff to run individual processes or device process flows on their behalf.
  - > WNF staff prepare a process flow and cost estimate for review.
  - > In addition to process execution, WNF staff can provide CAD layout, mask generation, materials or process development, and custom machine modification.

WNF staff offer complimentary design reviews to help new users effectively use lab resources. They are also available to consult on process development, process integration and fabrication throughout the duration of the project.



## TOOLS & CAPABILITIES

Our facility can process a wide range of unique materials and substrates ranging from a few millimeters up to 200 mm wafers.

### Lithography

Contact Mask Aligner  
Direct Write Laser/Mask Writing  
Electron Beam Lithography (JEOL JBX-6300FS)  
Nanoscribe Nano 3D printer

### Etch

Deep Reactive Ion Etch  
Chlorine and Fluorine ICP Etch  
Reactive Ion Etch  
HF and XeF<sub>2</sub> Vapor Etch

### Deposition

Chemical Vapor Deposition (PECVD)  
Atomic Layer Deposition (ALD)  
Electron Beam Evaporation  
Sputter  
Electroplating (Au, Cu, Ni, others)  
Parylene C, N

### Core Processing

Atmospheric Diffusion Furnace  
Rapid Thermal Anneal (RTA)  
Vacuum Anneal  
Wet Chemical Processing  
Precision Wafer Bonding  
Lapping / Polishing  
Wire Bonding  
Dicing Saw

### Metrology

Optical Microscopy  
Scanning Electron Microscopy (SEM)  
Contact and Non-contact Profilometers  
White Light Interferometer  
Reflectometer



## LEADERSHIP



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## CONTACT US

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*For more information visit [wnf.uw.edu](http://wnf.uw.edu).*



*WNF is part of the National Science Foundation's National Nanotechnology Coordinated Infrastructure (NNCI), a network of fabrication and characterization facilities that provide researchers with the tools and training necessary to engineer at the nanoscale. Learn more at [nnci.net](http://nnci.net).*