

Micro and Nanofabrication

Process, instrumentation and expertise for advanced fabrication for N/MEMS, electronics and materials.



Advanced Fabrication for N/MEMS, Electronics and Material Development

The Joint School of Nanoscience and Nanoengineering (JSNN) offers 24/7 access to a suite of Cleanroom resources including equipment training, remote processing, material analysis and consultations. JSNN provides expert-driven process development and analysis through skilled research staff to address the needs of academic, industry and government users. For access to the core user facility and professional staff, join the JSNN's Nanomanufacturing Innovation Consortium (NIC), administered by Gateway University Research Park (www.gatewayurp.com/pages/The_Nanoschool).

One of the few academic cleanrooms in the US with capability to process up to 200 mm substrates for diverse device and system applications, including for Nano/Microelectromechanical Systems (N/MEMS), Micro & Nanoelectronic Components, Devices and Systems, Biomedical Devices and Microfluidics, Photonics, Photovoltaics, Semiconductor Materials and Nanostructures.



Deposition

Kurt Lesker PVD75:
Thermal, e-beam, DC
and RF-sputtering



Etching

LAM Rainbow 4400
Reactive Ion Etcher



Photolithography

OAI 8808 Mask
Aligner w/DUV



Post-Processing

Lam IPEC 472
Chemical Mechanical
Planarization Tool

EXPERT TRAINING

Experienced staff can provide high-quality training in one-on-one or small group sessions.

RAPID ANALYSIS & CONSULTATION

Dedicated research staff can assist in new process development, consultation material analysis, as per your needs.

NEW PROCESS DEVELOPMENT

Work with our skilled staff to develop new processes for novel MEMS, bioelectronics and nanoelectronics devices

PROCESS TOOLS

Photolithography

Laurell Spin Coater w/Wet Station
OAI 8808 Mask Aligner with DUV
Ultron UH102-8 UV Curing System
YES 310 HMDS Vapor Prime Oven

Dry Etching

Lam Rainbow 4400/20B RIE
Plasma Etch PE-100 Asher/Etcher/Cleaner
STS Multiplex ICP-DRIE Tool

Deposition

Lesker PVD75 DC and RF Sputtering
Lesker PVD75 Thermal and E-beam Dep
Novellus Concept II PECVD

Thermal Processing

Oxidation and Annealing Furnace
Vapor-Phase Deposition for 2D Materials
Fisher Vacuum Oven

Wet Processing

Wet Etching Station – (2)
CMOS Clean Bench
Solvent and Lithography Bench

Post Processing

Tousimis 916B Critical Point Dryer
Lam IPEC 472 CMP (4, 6" and 8")
Lam Ontrak Brush Cleaner
Reynolds Tech Gold Plating Bench

Metrology

Carl Zeiss Microscope
Gaertner Scientific LSE-WS Ellipsometer
KLA – Tencor P-10 Profilometer
Jandel 4-point Resistivity Probe

Patterning

Zeiss EVO LS-SEM with E-beam lithography
Horiba XACTII Arrayer System
Microfab Jetlab4 Inkjet Printer

Bottom-up Material Synthesis

CEM Solvent-based Synthesis Microwave
Electrospinning Nanofiber Setup
Large Substrate Furnace (1600 C)
Fusion 3Design F306 3D Printer
Glove Box, Autoclave, Waterjet, Diamond saw



For more info or to join the Nanomanufacturing Innovation Consortium (NIC), please contact –

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JSNN



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