Micro-Device Laboratory Status

Stevens Institute of Technology

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Stevens Team

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- Graduate and undergraduate students

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Micro-Device Laboratory Specifications

- **Class: 100**
- **Temperature: 72±5F**
- **Humidity:** 45±5**% RH**
- **Dl water: >17 Meg Ohm/cm^2 resistivity**

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Equipment List

- XeF_2 Etcher
- DRIE
- Wet Bench
- Probe Station
- Oscilloscope
- Function generator
- Thermal Evaporator
- SEM/Nanomanipulator
- Shower/Eye watch
- Chemical Cabinets
- Mask Aligner
- Wet Bench
- Microscope
- Hot plates
- Spin Coater
- SU-8 Oven
- Pre-exposure Oven
- Post-exposure Oven
- Spin/Dryer
- Refrigerator

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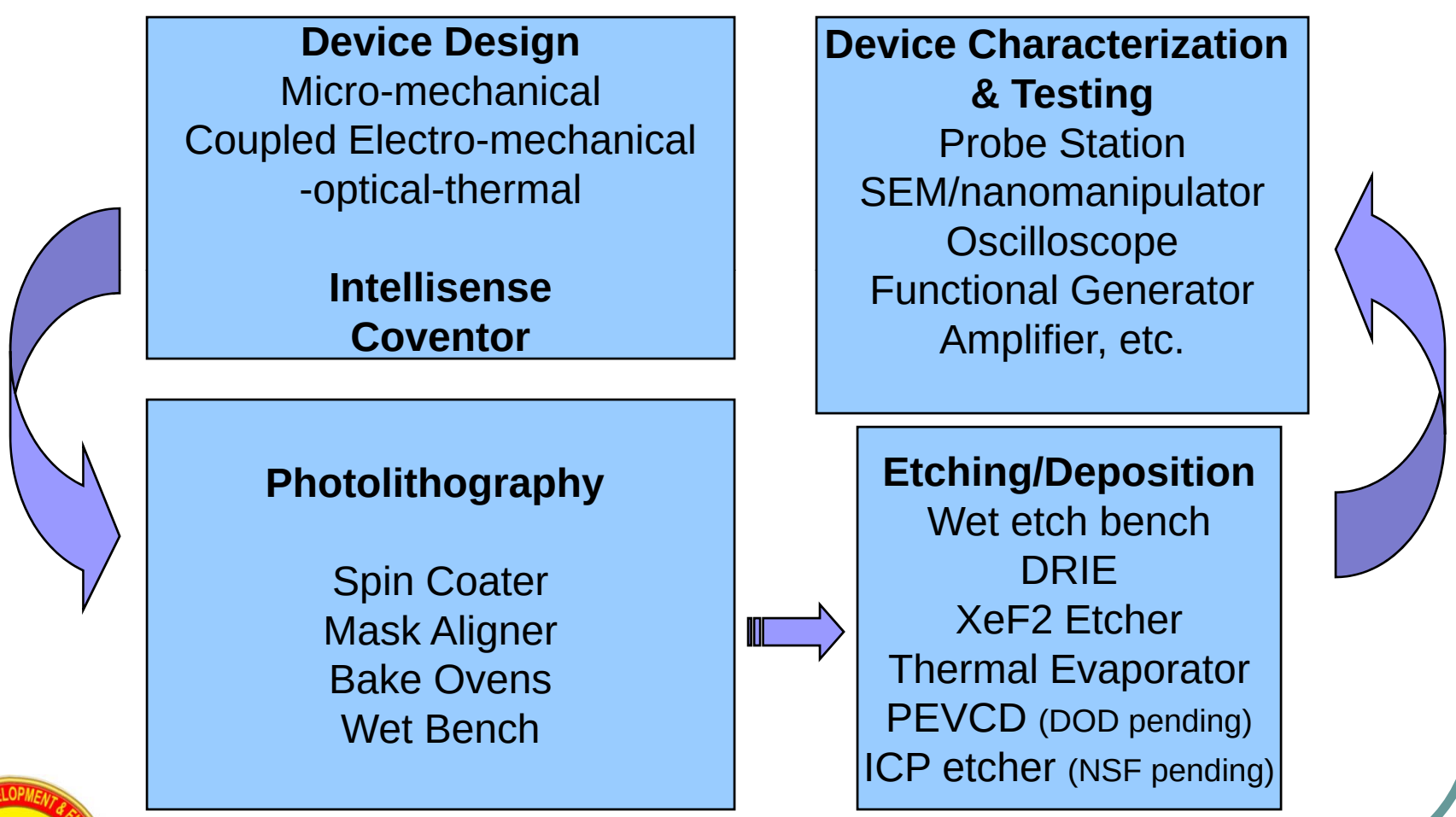
Micro-Device Lab Equipment



ARMAMENT RESEARCH, DEVELOPMENT & ENGINEERING CENTER
PICATINNY, NJ

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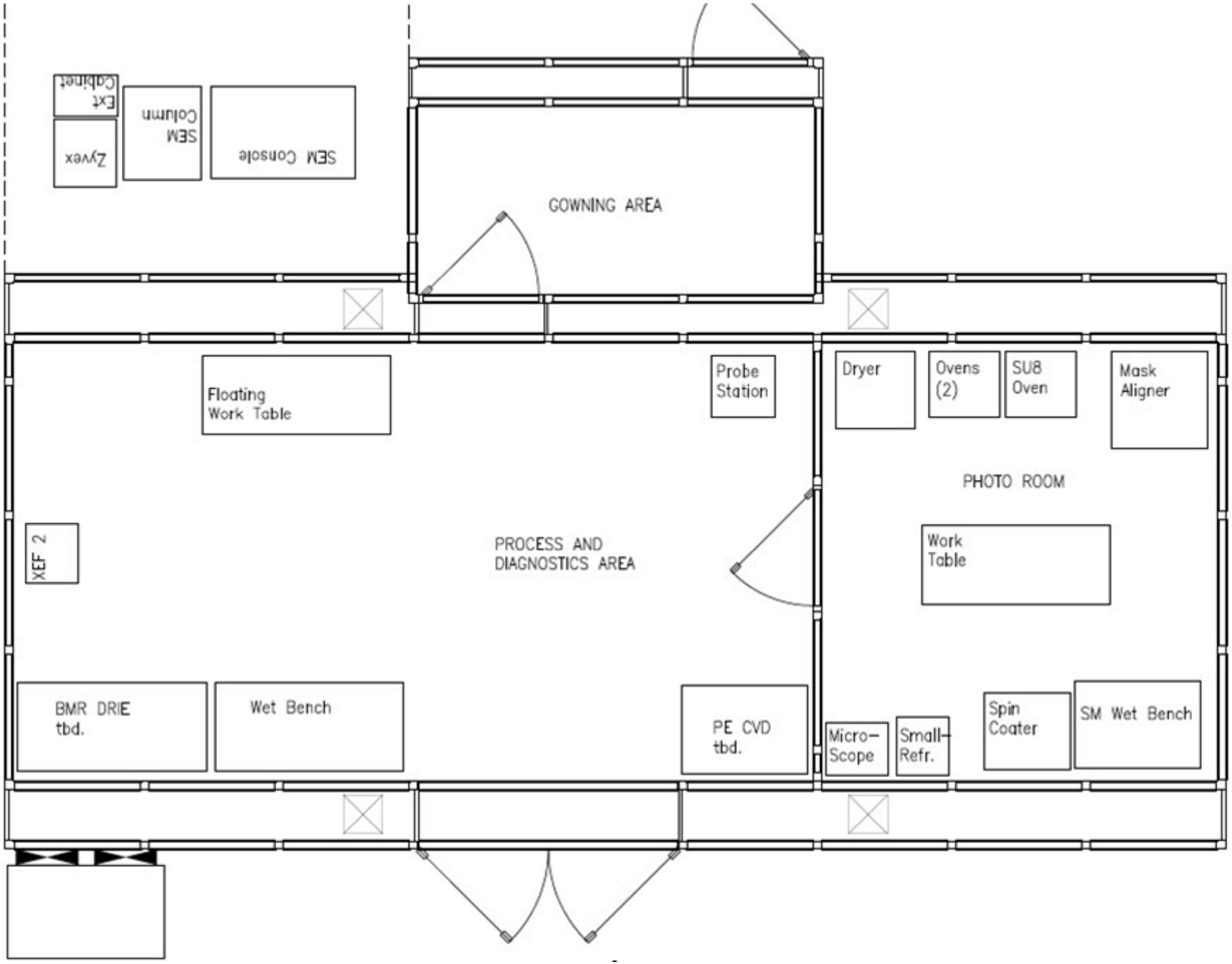

Ext Cabinet
Zyvex
SEM Column
SEM Console
GOWNING AREA
Floating Work Table
Probe Station
Dryer
Ovens (2)
SU8 Oven
Mask Aligner
PHOTO ROOM
XEF 2
PROCESS AND DIAGNOSTICS AREA
Work Table
BMR DRIE tbd.
Wet Bench
PE CVD tbd.
Micro-Scope
Small-Refr.
Spin Coater
SM Wet Bench

Mask Aligner Karl Suss MA6

MA6 Features:

- Wafers of 100 / 200 mm
- Polymer thickness < 0.1 to few 100 µm
- Wedge error compensation
- UV Wavelength selectable
- In-situ double side alignment
- Total process control

Photoroom Equipment

Coater

Dryer

Ovens

Dry Etching

DRIE

XeF2 Etcher

Deposition

Thermal Evaporator

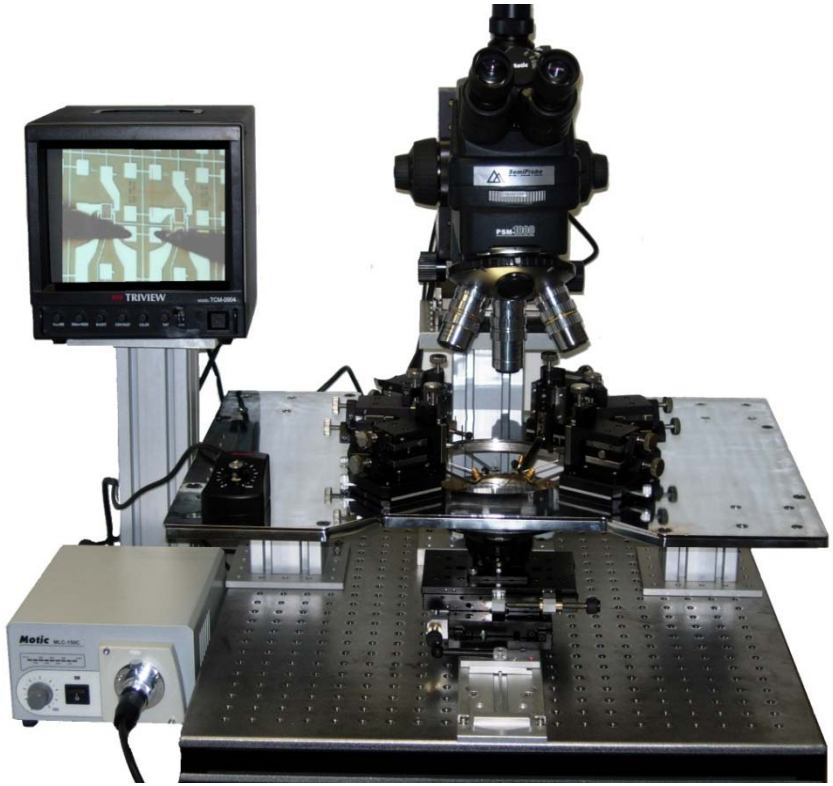
Wet Process Station

Features:

- Maximum chemical resistance
- Photoresist removal, wafer treatment and wet etch

Device Characterization

- Semiprobe Probe Station

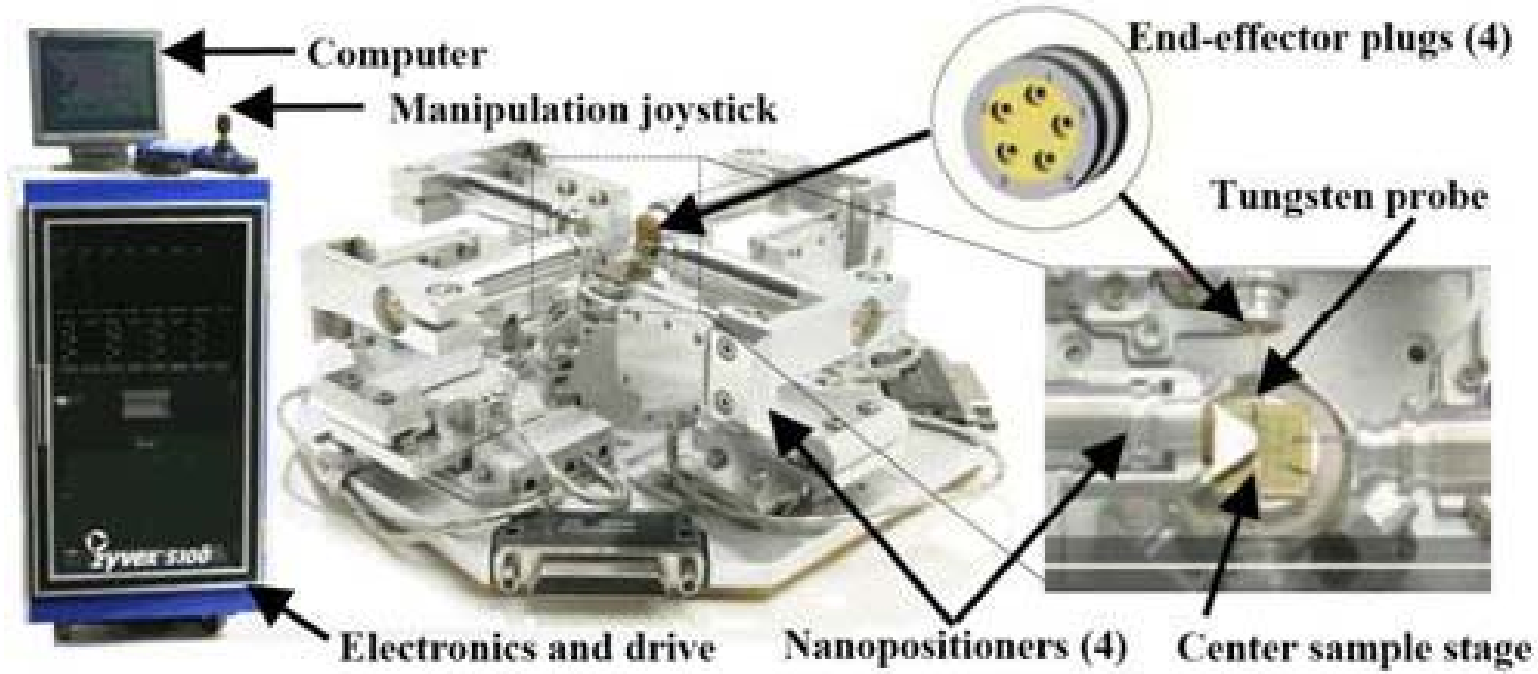


Device Characterization

- Scanning Electron Microscope (SEM)

Device Characterization

- Zyvex S100 Nanomanipulation System



Micro-Device Lab Capabilities

- Multi-scale multi-domain device design and simulation
  - Scale:from sub-micron to macro scale
  - Domain: coupled electro-mechanic-thermal-optical
  - Device: from components, subsystem to system
- Fabrication and characterization capability for polymer based NEMS/MEMS devices
- Processes fully compatible with those at MIT or Cornell clean rooms for more complicated devices fabrication
- Provide tainning and technical support for students and users

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