Services Offered

Pricing Information

Information on the hourly rates for Nano Fab tools and mask prices

RIT Nano Fab Services and Capabilities

The capabilities of the Nano Fab include:

- Wafer cleaning, ion implantation and diffusion, and high temperature processing both with conventional tube furnaces and RTP systems.
- CVD / PECVD deposition capabilities are available for oxides, nitrides, and polysilicon. A variety of vacuum systems are available for sputtering and thermal evaporation of metals and dielectrics.
- Lithography, including automated coating and development systems combined with a set of two 5:1 steppers with capabilities down to 0.40 microns, as well as 1:1 contact lithography and an electron beam exposure system for photo mask production.
- Plasma etch capabilities for silicon, oxides, nitrides, and metals and provision for a broad variety of wet chemical etch processes as well as copper electroplating and CMP.
- Complete prototyping of devices and systems with help from the electrical and surface analytical characterization labs, microelectronics layout and computer simulation facilities, and in-house industry-standard electronics packaging capability.

The RIT Nano Fab offers a wide range of services from single process up to foundry services. It is by no means a complete list, please contact us so that we can discuss your needs.

Foundry Services
The Nano Fab has a 2μm CMOS process with an effective L of 1.5μm.

- We have run this process for customers using their design and incorporating our test structure for test verification.
- Aluminum and Tungsten gate metals have been processed - others are possible.
- Our Vt's are well matched but implant splits are possible.
- Typical run time is ~8 weeks

Details about the RIT Nano Fab CMOS Process, Performance, Specifications, and Options

If you require this information or a quote on your process, please contact T. Grimsley

Single Process Services

Metrology

Film Thickness - Ellipsometry

- Woollam VASE with Autoretarder operating at wavelengths from 240-1700nm and variable angle of incidence.
- Rudolph Auto EL IV operating at three wavelengths

Film Thickness - Profilometry

- Tencor P2 is a long length scanning profilometer useful for measuring step heights.

Film Thickness - Optical

- The Nanometrics Spectrophotometers that provide noncontact optical film thickness measurement mapping - Resist, oxide, nitride.
**Resistivity Measurements**
- CDE Res Map provides sheet resistance and resistivity mapping of silicon wafers and films.

**Thin Film Deposition**

**Sputter Deposition**
- The Nano Fab has a variety of DC and RF deposition tools. The PE 4410 is loadlocked and has sputter etch capability.
- A wide variety of targets exist in bonded 8" form and unbonded 4" targets for the sputter head on the CVC 601 Sputter.
  - Al/Si, Ti, Cr, W/Ti, Cu, Mo, Ta - 8" bonded, water cooled targets
  - Cu, Ti, Ni, Cr, Ge, InSn, Mo, NiCr - 4" target for sputter head

**Thermal Evaporation**
- The Nano Fab has two thermal evaporators - one is a basket style for various metals and the other is a flash evaporator for deposition of aluminum.

**Electron Beam Evaporation**
The Nano Fab has a CHA Ebeam Evaporator with a 3KV electron beam gun with an eight pocket carousel.

**Plasma Enhanced Chemical Vapor Deposition (PECVD)**
The Nano Fab has an Applied Materials P5000 systems equipped with two deposition chambers
- TEOS Oxide from a few nanometers to many microns can be deposited

**Low Pressure Chemical Vapor (LPCVD)**
- Our ASM LPCVD system is capable of depositing Nitride, Poly and Low Temp Oxide.

**Short Courses**
The Nano Fab has run hands on courses in Cleanroom Etiquette, MEMS Processing, and Thin Films.

We can custom tailor a course to suit the needs of your organization. Please contact us and we can discuss your requirements.

A complete listing of all of the Tools in the SMFL can be found here