Foundry Service, Production Service

Description:
AMO runs a class 10 to class 1000 cleanroom with a total area of 400 m²: Nanolab AMICA. Here, high end fabrication equipment for semiconductor technology is operated in a highly flexible way to enable high quality nanofabrication, quick process changes and unconventional solutions.

Lithography
- Raith EBPG 5200 e-beam system:
  20/50/100 kV, sub 10 nm resolution, from samples of 10x10mm up to 8" substrates
- Canon FPA 3000 i5r i-line Stepper with 0,5 µm resolution
- EVG 420: 6" semi-automatic Maskaligner
- EVG 150: 4"-8" automatic resist coater and developer
- Süss MA8 Gen3 SCL: 2"-8" UV-Nanoimprint Lithography
- EVG 770: 4"-8" UV-Nanoimprint Step&Repeat Lithography
- EVG 620 Soft UV Nanoimprint prototype:
  4"-6" flexible template size, sub 50 nm resolution
- 2 experimental Interference Lithography systems:
  180 nm - 2.5 µm pitch, up to 8" substrates

Wet Processing
- ARIAS Wet benches: single wafer and batch cleaning and resist processes
- SCFluids Super Critical Dryer:
  CO₂ semi-automatic, up to 6" substrates

Furnaces
- Four 6"-8" Centrotherm Furnaces:
  Oxidation, POCI₃-Diffusion and Annealing
- Jipelec JetFirst: 6" Rapid Thermal Annealing system

CVD (Chemical Vapour Deposition)
- Centrotherm 6" LPCVD furnaces:
  Polysilicon, Silicon Nitride and LTO (low temp. SiO₂)

Sputtering / Evaporators
- Von Ardenne CS730 Cluster system: 6" DC and RF sputtering,
  Materials: W, Ni, Ti, TiN, Al, AlSi, AlCr, SiO₂, Ta₂O₅, AlO₃, HfO₂, etc.
- Pfeiffer Vacuum Classic 580: 6" e-beam and resistive evaporator.
  Materials: Al, Cr, SiO₂, Ti, Ta₂O₅, etc.

Atomic Layer Deposition
- 2 Oxford FlexAL Plasma assisted ALD
  Materials: AlN, Al₂O₃, TaN, TiN

Etchers
- Oxford PlasmaLab 100: 3 automatic chamber systems,
  6"-8" chlorine, fluorine and bromine based chemistry
- Tepla Semi 300: Microwave Plasma Etcher, batch and single wafer processes,
  O₂ and CF₄ processes

Metrology
- Zeiss Supra 60 VP, EDX
  High resolution SEM with automated CD control module
- Veeco (DI) Dimension 3100 SPM:
  high resolution STM, AFM, MFM, up to 6" substrates
- Veeco DekTak®ST surface profiler
- Leica INM 100 and INM 300 optical microscopes
- Philips PQ Ruby Ellipsometer

Electrical Testing
- High end Parameter analyser for small signal DC nanoelectronic device testing

Optical Testing
- Silicon Photonics device testing @1300 nm @1550 nm,
  tunable laser, fiber & butt coupled

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