



4 inch and to some degree 6 inch processing

ID	Name	Long name
1. Photolithography		
	Aligner-6inch	EVG620 mask aligner for 6-inch
	Antistiction	Antistiction coater for silicon stamps
	Developer-1	Photoresist developer 1 wet bench
	Developer-2	Photoresist developer 2 wet bench
	Developer-6inch	Developer-6inch
	EV aligner	Electro Vision contact aligner
	EVG NIL	EVG NIL
	Fine Strip	Acetone strip (final) of resist (+ ultrasonic)
	HMDS oven	HMDS primer for photoresist adhesion
	Hotplate	Hotplate for SU-8. Programmable with ramping possibilities.
	Hotplate 2	Hotplate for SU-8 development
	KS Aligner	Karl Süss MA6/BA6 contact aligner
	KS Spinner	Karl Süss photoresist spinner, single wafers
	Lift-off wet bench	Acetone wet bench for photoresist lift-off
	MVD	Applied Microstructures inc Molecular Vapor Deposition
	Oven 120C	Oven 120C
	Oven 250C	Oven 250C. Do not use this oven for burning resist.
	Oven 250C for burned resist	Oven 250C for burned resist
	Oven 90C	Oven 90C
	Plasma asher	Plasma asher, photoresist strip
	Plasma Asher 2	Plasma Asher 2
	Program oven	Program oven
	Rough Strip	Acetone stripping (initial) of resist (without ultrasonic)
	Speedline manual spinner	Speedline manual spinner
	SSE Spinner	SSE Maximus 804 cluster system for photolithography
	SU8-Developer	SU8-Developer bench
	Thyra	Thyra nanoimprinter
	Track 1	SSI spin track 1 with AZ 5214 resist (normal).
	Track 2	SSI spin track 2 with AZ 4562 resist (thick)
2. Thin Film Deposition		
	Alcatel	Alcatel SCM600 e-beam and sputter tool
	Furnace: LPCVD Nitrid	Silicon nitride LPCVD
	Furnace: LPCVD Poly-Si	Poly Silicon LPCVD
	Furnace: LPCVD TEOS	TEOS Glass LPCVD
	Hummer	Hummer gold sputtering system
	Leybold	Leybold LAB 500 e-beam evaporator, multiple wafers

	PECVD1	STS PECVD1, glass deposition
	PECVD2	STS PECVD2, glass deposition, rare earth doping facility
	PECVD3	STS PECVD3, deposition of silicon nitride, oxynitride and glass
	Wordentec	Wordentec QCL800 Metal evaporator
Under installation:	Kurt Lesker	Magnetic sputtering system
3.Etch		
	Al-Etch	Acid aluminium wet etch
	AOE	STS Advanced Oxide Etcher
	ASE	STS ICP Advanced Silicon Etcher
	BHF (KOH)	Silicon oxide wet etch bench 3
	Ethanol Fume Dry	Ethanol fume drying of wafers
	Extract Hood(KOH)	Extract Hood(KOH)
	Fume Hood(Acids)	Fume hood for handling acids
	Fume Hood(RCA)	Fume hood for RCA cleaning
	Fume Hood(Service Area)	Fume hood for service purposes, ultrasonic bath
	Fumehood(Bases)	Fumehood(Bases)
	Fumehood(Manual Spinner)	Fumehood(Manual Spinner)
	Isotropic Etch	Isotropic silicon wet etch
	KOH1	KOH Silicon wet etch 1
	KOH2	KOH Silicon wet etch 2
	Nitride etch	Silicon Nitride wet etch bench
	Oxide Etch 1	Silicon oxide wet etch bench 1
	Oxide Etch 2	Silicon oxide wet etch bench 2
	RIE1	STS RIE 1, etch of Si, SiO ₂ and Si ₃ N ₄
	RIE2	STS RIE 2, etch of Si, SiO ₂ and Si ₃ N ₄
4.Wafer Cleaning		
	7-up (masks)	Piranha etch, masks
	7-up 4"	Piranha etch, 4" wafers
	7-up 6"	Piranha etch, 6" wafers
	BHF (predep glass)	Etching of predep glass
	Carrier Clean	HF cleaning of quartz-carriers
	DHF-1 (RCA)	5% HF dip (RCA-clean)
	DHF-2 (RCA)	5% HF-dip (RCA old wafers)
	Polisher	Grammophone polisher for mechanical clean of glass wafers
	RCA	RCA1(Organic): NH ₄ O ₂ /H ₂ O ₂ /H ₂ O RCA2(Metal):HCl/H ₂ O ₂ /H ₂ O
	Spin dryer 1	Spin dryer 1
	Spin dryer 2	Spin dryer 2
	Spin dryer 3	Spin dryer 3
5.Thermal Process		
	Furnace: Al-Anneal	Low temperature Al-Anneal furnace
	Furnace: Anneal-1	High temperature anneal furnace 1
	Furnace: Anneal-2	High temperature anneal furnace 1
	Furnace: APOX	Furnace: APOX
	Furnace: Bor Drive-in	High temperature anneal and diffusion furnace
	Furnace: Bor predep	High temperature anneal and diffusion

		furnace
	Furnace: Dry Oxide	Dry oxidation for 2" wafers
	Furnace: Gate Oxid	High temperature gate oxide furnace
	Furnace: Noble	Non-clean annealing furnace
6. Ion Implantation		
	Furnace: Phosphor Drive-in	High temperature anneal and diffusion furnace
	Furnace: Phosphor predep	High temperature anneal and diffusion furnace
	Jipelec RTP	Jipelec RTP
7.Packaging		
	Anodic Bonder	Anodic wafer bonder
	Logitech 2000 Polishing Machine	Logitech 2000 Polishing Machine
	Saw	Disco Dicing Saw
	TPT Wire Bonder	TPT HB05 Wire Bonder
	Wafer scribe	Wafer scribe
8.Characterization		
	Dektak 8	Dektak 8 stylus profiler
	Drop Shape Analyzer	Krüss Drop Shape Analyzer DSA100
	Ellipsometer	Ellipsometer
	Filmtek	Filmtek 4000 Spectrometer
	Four Point Probe	Four Point Probe for resistivity measurements
	Front-Back alignment checker	Front-Back alignment checker
	IR-Camera	Infrared camera
	Karl Suss probestation	Karl Suss probestation
	NanoMan(AFM)	Nanoman(AFM)
	Optical microscopes	Optical microscopes
	Prism coupler	Prism Coupler
	Promux	Promux thickness measurer
	SEM - FEI	FEI Nova 600 NanoSEM
	SEM - LEO	LEO 1550 Scanning Electron Microscope with EDX
	SIMS	ATOMIKA SIMS
	Tencor P-1	Tencor P-1 stylus profiler
	Thickness measurer	LMG Stylus thickness measurer
9.E-beam lithography		
	E-beam Writer	JEOL E-Beam lithography tool
10.III-V Lab		
	III-V Aligner	MA1006 K&V Aligner for III-V materials
	III-V Dielectric Evaporator	III-V Dielectric Evaporator
	III-V Oven	III-V anneal and oxidation Furnace
	III-V Plasma Asher	Diener Pico Plasma Asher for III-V materials
	III-V Profiler	Dektak 3ST stylus profiler
	III-V RIE	III-V RIE
	III-V Spinner	Spinner for III-V and highly toxic resists
	Physimeca	Physimeca metal evaporator
	PL-mapper	PL-mapper
	SEM - JEOL	JEOL JSM 5500LV Scanning Electron

		Microscope
Under installation:	MOVPE	Epitaxial growth system - indium aluminium gallium arsenide phosphide



Nanolab

4 inch and 6 inch wafer processing

ID	Name
1. Photolithography	
	Suss Microtec MA6/BA6.
	Ambios XP-2 Stylus profiler.
Arias bench	Laurell WS-650S-23NPP/C2/IND.
Arias bench	Laurell EDC-650-8NPP/IND.
Arias bench	Präzitherm Programable.
Arias bench	Präzitherm Programable.
	IKA RCT basic.
Arias bench	Martin walter Powersonic.
	SCS manual dispense spincoater.
	Ultrasonic bath.
	UV laser direct writing.
2. Thin Film Deposition	
	STS PECVD.
	Leybold e-beam evaporator, multiple 4" wafers.
	SVS 2400, magnetron sputtercoater.
	Metallux, Thermal evaporation.
3. Etch	
	STS 320 PC, Sofie endpoint detection.
	Plade Sigma, semiautomatic wetbench.
	Plade Sigma, semiautomatic wetbench.
	Plade Sigma, semiautomatic wetbench.
4. Wafer Cleaning	
	Verteq Thornton wafer washer.
	Branson 7000
5. Thermal Process	
	Instron SFL RTA furnace.
	Nabertherm, Buck & Holm B 170.
	Nabertherm, Buck & Holm B 170.
	Heraeus vacutherm Kendro.
6. Nanoimprint	
	EVG520.
7. Packaging	
	Disco DAD321, automatic dicing saw.
	Kuliche & Soffa 4523AD.
	Camax Precima.
8. Characterization	
	Sentech SE850, incl. Excalibur FTS 3000.
	Suss Microtec manual probe station.
	Mitutoyo Quick Visio Marlin 3D.
	Olympus BH-2.
	Zeiss Aksioskop 2 plus.
	Zeiss.
	Zeiss, Focused Ion beam, EDX.
9. E-beam lithography	

Zeiss, SEM 1540 XB.

4 inch wafer processing

ID	Name
Photolithography	
	Obducat 2.5" Nanoimprint Lithography
	YES 6112 HMDS oven
	Hotplate integrated with spinner
	Karl Suss MA-4 mask aligner
	Wet bench for organic processes (development / lift-off)
	Oven 50-250C, vertical laminar flow
	CEE 100 spin coater w. integrated hot-plate
2. Thin Film Deposition	
	Temescal FC1800 e-beam evaporator (4 crucibles)
	microDrop AutoDrop 3D ink-jet printing system
	Fumehood incl. Suss Delta 10TT spinner and baths for organic chemistry
	Plasma polymerization, AC low power
3. Etch	
	Fume hood for acid etch
	Fume hood for basic etch
	Plasmatherm 740 RIE, fluorine + oxygen etch
4. Wafer Cleaning	
	Piranha clean
5. Thermal Process	
6. Ion Implantation	
7. Packaging	
	Karl Suss wafer scribe
8. Characterization	
	Ambios XP2 stylus profiler
	Veeco Dimension 3000 AFM
	Optical microscopes, incl. fluorescence
	Zeiss 960 SEM with EDX
	ION-TOF TOF-SIMS IV
	Fogale Microsurf interference microscope
9. E-beam lithography	
	Heidelberg DWL66 laser maskwriter



4 inch wafer processing

ID	Name
1. Photolithography	
	Suess mask aligner
	resist developer bath
	resist strip bath
	HMDS oven
	Hotplates
	Lift off bath
	Plasma asher
	spin coater
	ELMS Excimer laser materials processing station (193 nm)
2. Thin Film Deposition	
	Silicon nitride LPCVD
	Poly silicon LPCVD
Under installation:	Thin film deposition system (e-beam plus magnetron)
	Langmuir Blodgett trough
3. Etch	
	Silicon wet etch
	Fume hood, general purpose
	ultrasonic bath
	Silicon nitride wet etch
	Silicon oxide wet etch
	Alcatel ICP RIE, Si etch
4. Wafer Cleaning	
	Piranha clean
	RCA clean
5. Thermal Process	
	Silicon annealing
	Silicon oxidation
6. Ion Implantation	
7. Packaging	
	Disco Dicing Saw
	Wire bonder
8. Characterization	
	Ellipsometer
	Probe station wafer tester
	JPK Nanowizard AFM plus fluor.microscope
	DIPC inspection microscope
	FESEM Hitachi
	Interference microscope
9. E-beam lithography	
	Raith e-beam lithography at SEM