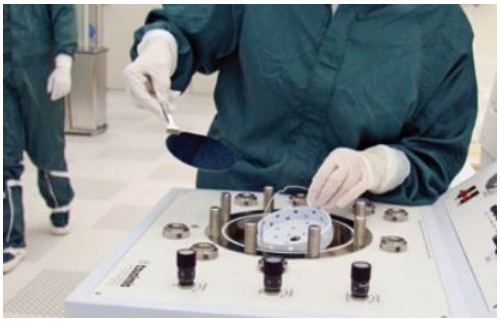




Deposition / Etching / Other processes

Deposition

SiPhotonIC can deposit a large number of materials for photonic integration through plasma-enhanced, e-beam evaporation and sputtering. Common semiconductor fabrication thin film deposition processes are offered.

System	Process	Materials
Standard		
PECVD (STS)	PECVD	a-Si, SiO, $Si_xO_yH_z$
LPCVD	LPCVD	Poly-Si, SiN, SiO_2
Sputter System (Lesker CMS 18)	Sputtering	SiO_2, Si, SiON, ITO, Ni, Cu, Al,Ti, $BaTiO_3$, NbTi, PMMA, Mylar, SU-8, Carbon
Upon request		
Oxide growth oven	Thermal	Si oxidation (wet & dry)
Annealing furnaces		Si & IIIV samples, Alloying, Boron, Phosphorus, Polymers
Picosun R200	ALD	Al_2O_3, TiO_2, HfO_2, ZnO and AZO
Picosun R200 Advanced Plasma		Al_2O_3, TiO_2, HfO_2, AlN and TiN

Etching

Wet etching and dry etching options are available for customers. A total of 8 plasma assisted (ICP) tools for dry etching and several etch baths for wet chemical etching are available. The table below summarizes the capabilities.

Tool	Process
Reactive Ion Etching	Si, SiO_2, SiN_x, polymers, III-V alloys
Ion Beam Etching (Oxford IBE/IBSD Ionfab 300)	Metals, III-V alloys
Advanced Silicon Etching (DRIE-Pegasus and ASE, SPTS)	Si, SiNx
Advanced Oxide Etching (STS)	SiO_2, SiN_x, SiOxNy, quartz
Inductively Coupled Plasma Etching (SPTS)	Metals, Polymers, III-V alloys
Wet Etching	Aluminum etch, HF, Isotropic Silicon etch, KOH, SiN_x etch, various III-V wet-etches

Other processes

Dicing: Saw dicing for chips >5mm x 5mm (standard), Stealth dicing (SD) for chips with edge-couplers (upon request)

In-line characterization: SEM imaging, optical microscopy (upon request), optical profiler (upon request)

Packaging: electrical/optical packaging (upon request)

For design & ordering options please refer to our *Prototyping Manual*.

SiPhotonIC TECHNOLOGIES

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