

PECVD

SPT's PECVD system is designed for reliable deposition of thick oxide and low-stress silicon nitride in advanced MEMS and semiconductor applications.



Cetus, Capella

SPT's plasma-enhanced chemical vapor deposition (PECVD) system delivers high-quality silicon oxide and silicon nitride films with low stress, excellent uniformity, and reliable step coverage.

Designed for MEMS, optical coatings, and passivation films across a wide range of thicknesses.

Applications:

- ✓ MEMS Devices
- ✓ Inkjet Printer Heads
- ✓ Through-Silicon Vias (TSVs)
- ✓ RF Devices
- ✓ Power Devices
- ✓ LED Devices
- ✓ Optical Devices

FEATURES

Why Choose SPT for High-Precision PECVD



High-Speed, Crack-Free Oxide Films

Enables fast deposition of thick SiO_2 layers for MEMS and optical waveguide applications, without cracks or voids.



Excellent Step Coverage for TSV Structures

Deposits low-temperature silicon oxide with high conformity on narrow, high-aspect-ratio TSV features.



High-Quality SiN with Low Hydrogen Content

Ideal for passivation of compound semiconductors, delivering dense silicon nitride films with minimal hydrogen.



Low-Stress SiN for MEMS Membranes

Forms high-uniformity silicon nitride films with ultra-low stress for critical membrane applications.



Scalable Platform for R&D to Production

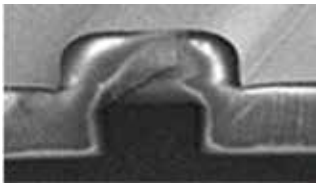
Offered in vacuum load-lock and cluster tool formats to support a wide range of production needs.

PERFORMANCE

From Thick Oxides to Low-Stress SiN — Results That Matter



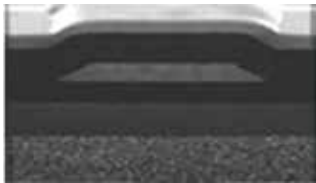
Void-Free Oxide Fill
for TSV Structures



Thick Silicon Oxide Film
Deposition



Low-Stress SiN Deposition
(Courtesy of Cambridge Univ.)



Conformal Oxide
Deposition over
Aluminum Interconnects

Specifications



Cetus



Capella

Process Module	Cetus	Capella
Wafer size (mm)	200	200
Platform	APX, DPX, VPX, CPX	APX, DPX, VPX, CPX
Process Temperature	Moderate	≤ 100°C
Deposition Materials	SiO2, SiN, SiON, SiC	SiO2, SiN



APX



DPX



VPX



CPX

Platform	APX	DPX	VPX	CPX
Intended Use	R&D	Prototype	Small Volume	Mass Production
Number of Chambers	1	2	3	4
Cassette Transfer Robot	-	Atmospheric	Vacuum	Vacuum
Robot Motion	2-Axis	2-Axis	3-Axis	3-Axis
Number of Cassette Stations	0	2	1	2

