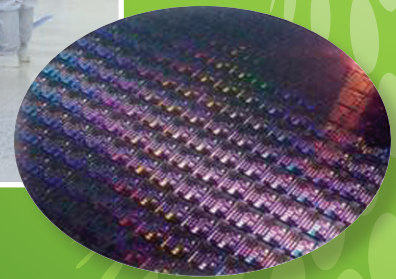


ION IMPLANT FOUNDRY SERVICES



The Total Ion Implantation Solution

SEMITECH's offer the most complete implant "service" in the industry that can process of wafers from 6" to 8" ion implantation also available.

- SEMITECH manufacturing sites in Korea for medium and high current ion implantation services
- In addition SEMITECH can perform implants to 200Kev ~ 5Kev
- Whether it is for large volume manufacturing or single production runs, SEMITECH has a solution to fit all customers needs
- Independence, Quality (ISO 9001/2008) and Confidentiality

Your Benefit

- Increase your capacity without heavy investments
- Efficient production back-up enables you to meet your delivery times
- Cost effective even for small volume
- Precise controls of contamination, uniformity and reproducibility
- Assistance in defining processes and / or choosing equipment



Head Office

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Ochang Business Division

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E-1000



E220HP



RS-35C



AST-2800

Facilities

- Ion Implanters : E220HP, E1000
- RTP : AST-2800
- Measuring Instrument : RS-35C
- Ultra fast service possible : 24h upon request
- Class 1,000 (0.5 μm)
- Equipment with special handling for thin wafers

SEMITECH Standard Implantation Parameters

Parameter	E220HP	E-1000
Species	B, BF ₂ , P, Ar, As, Ge, Si, In, Sb...	B, BF ₂ , Ar, P, As...
Energy	5~200keV Decel / Drift Double charged ions	2~200keV Decel / Drift
Dose	1E12~5E14 ions/cm ² Uniformity(1 σ): \leq 1.5% Reproducibility(1 σ): \leq 1.5%	5E13~5E16 ions/cm ² Uniformity(1 σ): \leq 1.5% Reproducibility(1 σ): \leq 1.5%
Dimensions	150mm/6" to 200mm/8"	150mm/6" to 200mm/8"
Tilt	0° to 60°	-7° to +7°
Rotation	Available	-
Cooling	100°C ↓ @500W	100°C ↓ @2,800W



Applied Materials_ CVD Product

- Respond to all products for 150mm and 200mm process
- Refurbishment or Re-Manufacturing Process
- Meet customer's requirements based on the best quality
- Provide the best solution for production optimization
- Clean room environments operations

System Refurbish



Producer



Centura-5200, Dxz



Centura-5200, Ultima(HDP)



P-5000 Product



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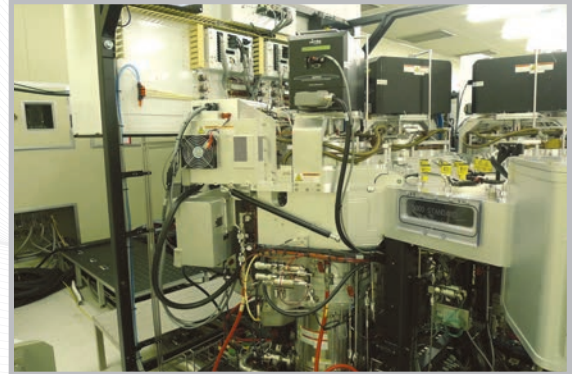
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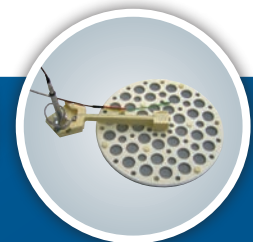
Module Assembly & Retrofit

- NBLL/WBLL Assembly
- Chamber Up-grade & Retrofit
- Chamber Position Change & System Re-location
- Every Sub Module build-up or modify
- Module & Parts Repair
- Parts Sales : OEM, 2nd Vender, Surplus, Local in Korea



STD Config. Of CVD Product

CVD Product STD Configuration				
Configuration	C5200 HDP Plus	C5200 Dxz	Producer	Remark
Mainframe Type	Centura 5200	Centura 5200	Producer S	
Wafer Size	150 mm/200 mm	150 mm/200 mm	150 mm/200 mm	
Wafer Shape	SNNF/JMF	SNNF/JMF	SNNF/JMF	Option
Chamber A / B / C	HDP FSG/USG	PE SILANE	A/B/C or B/C-PE SILANE	
ESC(HDP Only)	W/WTM	N/A	N/A	
Ceramic Heater	N/A	Ceramic	Ceramic	
Nozzle(HDP Only)	24 Nozzle	N/A	N/A	
Turbo Pump(HDP Only)	STP A-2203	N/A	N/A	Option
Gate Valve(HDP Only)	VTEX/NC	N/A	N/A	Option
RPS	MKS AX 7670	MKS Astron	MKS Astron	Option
RF Generator	ENI	AE RFG2000	AE RFG2000	
Chamber E	MS Cooldown	MS Cooldown	N/A	
Chamber F	Orienter	Orienter	N/A	
Robot	HP	HP	VHP	Option
FE Robot	N/A	N/A	Manual FE-Brooks(PRI)	
LoadLock	NBLL/WBLL	NBLL/WBLL	STD	Option
MFC Type	SEC4400	SEC4400	SEC4400	Option
System Controller	HDP	Centura DXZ	STD	
SMIF	Interface Only	Interface Only	Interface Only	Option
UMB Length	55 Feet	55 Feet	55 Feet	Option



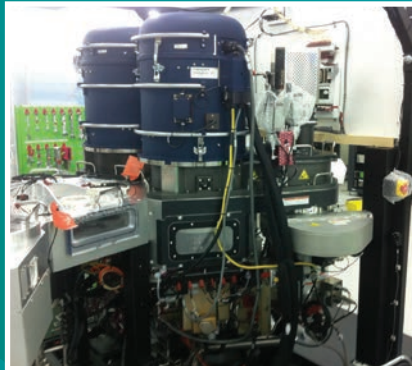
Applied Materials_ ETCH Product

- Respond to all products for 150mm and 200mm process
- Refurbishment or Re-Manufacturing Process
- Meet customer's requirements based on the best quality
- Provide the best solution for production optimization
- Clean room environments operations

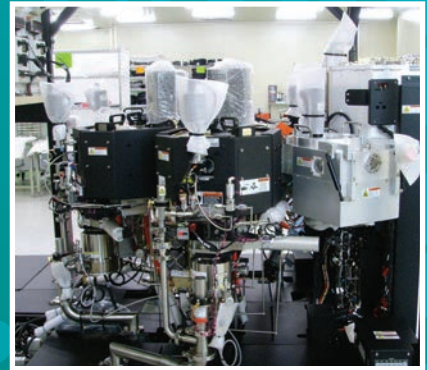
System Refurbish



DPS+Metal



DPS+Poly



Oxide Super-e/eMax



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Module Assembly & Retrofit

- Robot Overhaul and Upgrade- HP / HP+ ⇔ VHP+
- NBLL/WBLL Assembly
- VDS KIT ASSEMBLY
- Chamber Upgrade
DPS -> DPS+ , e-Max -> e-Max CT
- Process Kit Upgrade
- Module & Parts Repair
- Parts Sales : OEM, 2nd Vender, Surplus, Local in Korea



STD Config. Of ETCH Product

Etch Product STD Configuration				
Configuration	DPS+ Metal	DPS+ Poly	Super-e	Remark
Mainframe Type	Centura I, II	Centura I, II	Centura II	
Wafer Size	150 mm/200 mm	150 mm/200 mm	150 mm/200 mm	
Wafer Shape	SNNF/JNNF	SNNF/JNNF	SNNF/JNNF	Option
Chamber A / B	DPS+ Metal	DPS+ Poly	Super-e	
ESC	Polymide	Polymide	CESC	Option
Turbo Pump	SeikoSeiki 1303	STP 2203	STP 301 CVB	Option
DTCU	ES-DTCU	ES-DTCU	N/A	
Bias Generator	ACG-6B	ACG-6B	ENI OEM-28B	
Source Generator	GMW25	Atlas 2012	N/A	
Gate Valve	STD	STD	Throttle Valve	Option
Chamber C	ASP+ Enhanced	DPS+ Poly	Super-e	
Chamber D	ASP+ Enhanced	N/A	N/A	
Chamber E	Fast Cooldown	N/A	N/A	
Chamber F	Orienter	Orienter	Orienter	
Robot	VHP+	VHP+	HP+	Option
LoadLock	NBLL/WBLL	NBLL/WBLL	NBLL/WBLL	
MFC Type	SEC7400	SEC7400	SEC7400	Option
System Controller	66" STD	66" STD	66" STD	
AC Rack	66" STD	66" STD	66" STD	
SMIF	Interface Only	Interface Only	Interface Only	Option
UMB Length	60 Feet	60 Feet	55 Feet	Option



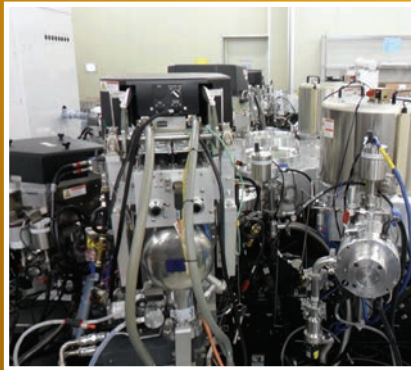
Applied Materials_ PVD Product

- Respond to all products for 150mm and 200mm process
- Refurbishment or Re-Manufacturing Process
- Meet customer's requirements based on the best quality
- Provide the best solution for production optimization
- Clean room environments operations

System Refurbish



Endura, Sputter



Endura, Mo-CVD



Endura, Copper



Centura PVD



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Module Assembly & Retrofit

- NBLL/WBLL Assembly
- Source Assy(12.9" / G12 / Vectra IMP)
- Al/Ti/TiN/MOCVD/Orienter / PreClean I,II Chamber Assy
- Generator& System Controller
- Heater / Source / Chamber Retrofit
- Module & Parts Repair
- Parts Sales : OEM, 2nd Vender, Surplus, Local in Korea



STD Config. Of PVD Product

PVD Product STD Configuration					
Configuration	STD AL/Ti(N)		Mo-CVD(HP+)		Remark
Mainframe Type	Endura		Endura		
Wafer Size	150 mm/200 mm		150 mm/200 mm		
Wafer Shape	SNNF/JNNF		SNNF/JNNF		Option
Process Type(Ch1 ~ 4)	AL	Ti(N)	IMP Ti	MOCVD TiN	
Wafer Chuck	Clamped	Unclamped	Unclamped		
UHV Pump Options	Low Vibration		Low Vibration	Turbo Pump	
Chamber Body	Standard	Wide Body	Wide Body		
Heater	Original 4F	A101	B101	HP+ TxZ	
Source Type	12.9"	G-12	Vectra IMP		
Chamber A Option	Pass Thru		Pass Thru		
Chamber B Option	Standard Cooldown		Standard Cooldown		
Chamber C Option	PCII PIK I		PCII PIK I		
Chamber D Option	PCII PIK I		PCII PIK I		
Chamber E Option	Standard Orienter Degas		Standard Orienter Degas		
Chamber F Option	Standard Orienter Degas		Standard Orienter Degas		
LoadLock Type	Narrow Body		Narrow Body		
Indexer and Handler	Enhanced Tilt-Out		Enhanced Tilt-Out		
Buffer Robot Type	HP+		HP+		
Transfer Robot Type	HP+		HP+/VHP		Option
Transformer Type	Direct Feed Short Frame		Direct Feed Short Frame		
MFC Type	Stec 4400		Stec 4400		Option
Cryo Compressor Type	Water Cooled 9600		Water Cooled 9600		
Cryogenic Chiller	None		None		
Generator Rack Type	PVD Endura Type		PVD Endura Type		
2nd Generator Rack	Yes		Yes		
3rd Generator Rack	No		No		
Umbilical(M/F to Controller)	50FT		50FT		Option



PARTS

OEM, 2nd New, Used Parts Supply

Semiconductor Equipments Spare Parts

(Consumable, Non-consumable)

- Applied Materials All Product : 6", 8", 12"
- Novellus Product : 6", 8"

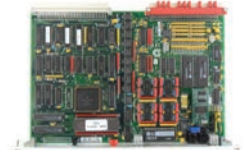
Generator

(RF Generator, AC/DC Power Supply, Match)



Control Unit / PCB

(Robot Drive, Motor Control Box, Lamp Drive)



Drive Assembly

(Motorrizer, Lift, Lamp Module)



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Robot

(VHP, HP)

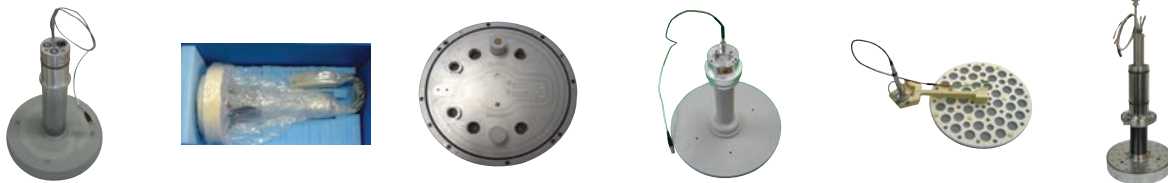


System U/B, Signal Cable



Chuck & Heater

(ESC, Ceramic Chuck, Heater Assy, Subsector)



Vacuum & Cooler Unit

(Heat Exchanger, Chiller, Turbo, Cryo, Compressor)



※ All of the above parts are possible to repair.

