HIGH DENSITY PLASMA ETCHING / DEPOSITION SYSTEMS

MODEL: MET Systems, for Silicon Micromachining

INSTALLATION PLACE: Plasma Laboratory, Department of Microelectronics.

NUMBER OF MACHINES: 2

DESCRIPTION: Plasma etching systems (micromachining etching systems) by Alcatel – Adixen. The systems are equipped with a high-density helicon antenna plasma source, a magnetically confined diffusion chamber and a loadlock.

SPECIFICATIONS

1. Up to 4" wafer samples
2. Max thickness 3mm
3. Type of samples (Plates, silicon wafer, pieces)
4. Applied Bias: Power: 0 – 300 W (typical bias 0 – 100V in O_2)
5. Temperature: a liquid Nitrogen cooling system with Helium backside thermal transfer permitting operation from -180 °C to + 100°C.
6. Pressure range 2 – 100 mTorr
7. Gases: C_4F_8, SF_6, O_2, Ar, He, H_2
8. SCCM 0 – 200 C_4F_8, 0 – 300 SF_6, 0 – 150 O_2, 0 – 25 Ar

APPLICATIONS

1. Silicon Etching
   - Bosch Process, Typical Etch Rate: ~4.7 um/min
2. Polymer etching
   - O_2 plasma, Etch Rate PMMA~1500nm/min (1900 W, -100V Bias, 0.75 Pascal, 15 ^oC)
3. Deposition Process
   - (Teflon-Like) Fluorocarbon Deposition, Deposition Rate: ~35nm/min (900 Watt, 0 V Bias, 5.33 Pascal, 0 ^oC)
4. Hydrophilic surface creation
   - O_2 plasma

CERTIFICATION/ACCREDITATION

The facility is not certified or accredited.

CONTACT PERSON

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