Wet Etching and Cleaning

Processes performed at Wet Etching and Cleaning

Techniques:

- Metal and dielectric wet (isotropic) etching.
- Surface cleaning.
- Photoresist stripping: oxygen plasma and wet stripping Thermal silicon oxidation.

Equipment:

*Metal and dielectric wet etching*

- 9 baths and 6 DI water overflow rinse tanks for CMOS compatible wafers up to 150 mm.
- 7 baths and 2 DI water overflow rinse tanks for wafers with contaminant metals up to 150 mm.
- 2 Rinse and Dryer (R&D) devoted to CMOS compatible wafers of 100 mm and 1 R&D for 150 mm wafers.
- 1 R&D for wafers with contaminant metals of 100 mm and 1 R&D for 150mm.
- 2 ovens for drying and photoresist bakes for CMOS compatible wafers and 1 oven for drying and photoresist bakes for contaminant metal wafers.
**Surface cleaning**

- 5 baths and 2 DI water overflow rinse tanks for CMOS compatible wafers up to 150 mm.
- 2 baths and 1 DI water overflow rinse tanks for wafers with contaminant metals up to 150 mm.
- 2 R&D (one for CMOS compatible wafers and another for wafers with contaminant metals) for 100 mm wafers.
- 2 R&D (one for CMOS compatible wafers and another for wafers with contaminant metals) for 150 mm wafers.
- A Sirius Semitool equipment for cleanings based on O3 and hot water spray for CMOS compatible wafers up to 150 mm.

**Wet and oxygen plasma photoresist stripping**

- 1 double ultrasonic bath for solvents and 1 DI water overflow rinse tank for CMOS compatible wafers.
- 1 bath for wet photoresist stripping in acid and 1 DI water overflow rinse tank for CMOS compatible wafers.
- 2 baths for wet photoresist stripping for wafers with contaminant metals and 1 DI water overflow rinse tank for wafers with contaminant metals up to 150 mm.
- PVA Tepla 300SA plasma asher for photoresist stripping with oxygen plasma for CMOS compatible wafers.
• Tepla GIGABatch 360M plasma asher for photoresist stripping with oxygen plasma for wafers with contaminant metals up to 150mm.

Processes:

**Etching and stripping of dielectrics**

- Etching and stripping of SiO2 in HF mixtures of different concentrations.
- Isotropic etching of silicon and polysilicon based on mixtures of HNO3 y HF.
- Etching of Si3N4 in H3PO4.
- Thin film etching of TiO2 and HfO2 in HF mixtures.
- Thin film etching of Al2O3 based on mixtures of HNO3 and H3PO4.

**Etching of metals**

- Al etching based on mixtures of HNO3 and H3PO4.
- Au etching based on mixtures of I2.
- Ni etching in HNO3.
- Ti etching based on mixtures of propilenglycol and HF

**Surface cleanings**

Cleaning of organics, particles and remaining traces of metallic (ionic) contaminants in:

- Piranha mixture, oxide stripping and RCA cleaning.
- Cleanings with solvents (acetone and isopropanol).
- O3 and hot water spray based cleaning.

**Wet and oxygen plasma photoresist stripping**:

- Photoresist stripping in acetone.
- Photoresist stripping in acid.
- Photoresist stripping in stripper (basic mixture).
- Photoresist stripping in oxygen plasma.

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