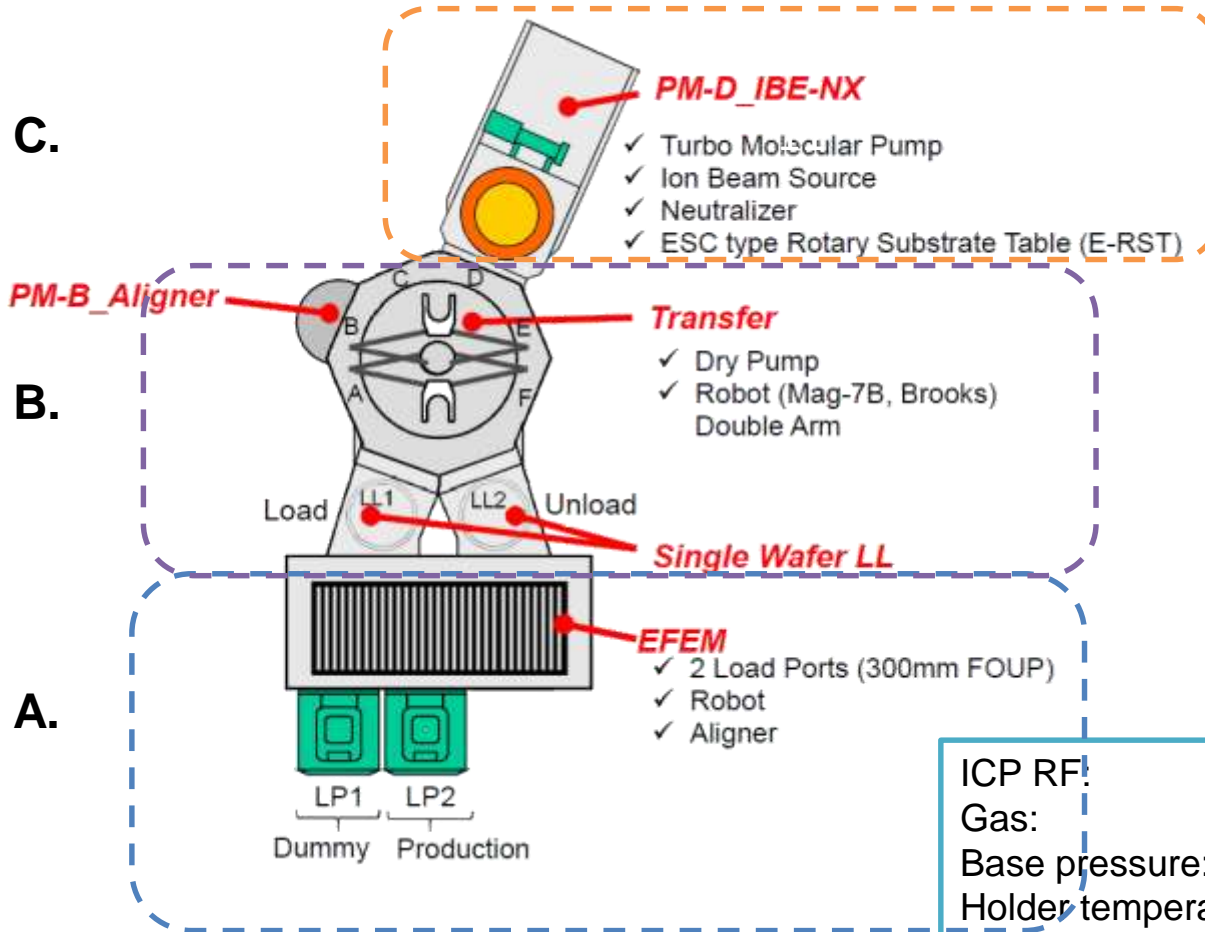


12 inch Ion Beam Etcher

Technical Information

Overview

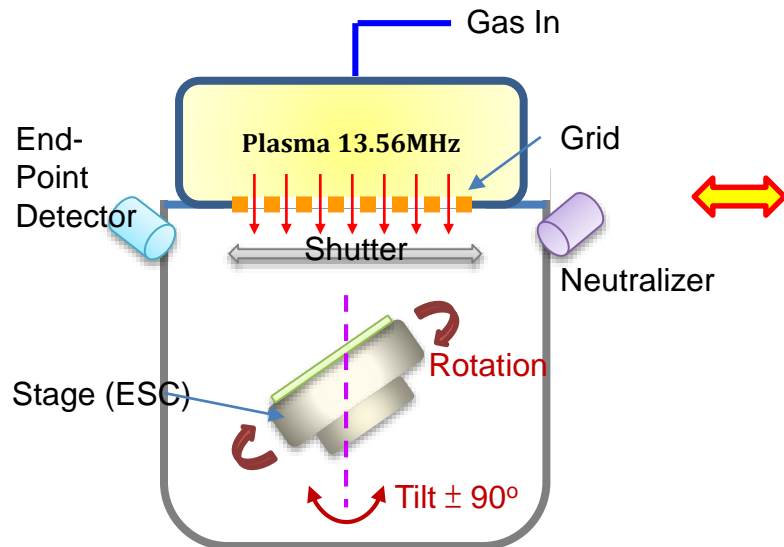
TSRI NC8000 IBE Etcher



Canon Anelva NC8000

ICP RF:	13.56MHz / 3kw
Gas:	Ar (Kr, Xe, Ne)
Base pressure:	5.0 10 ⁻⁴ Pa (3.7x10 ⁻⁷ Torr)
Holder temperature:	18°C Water-cooled
Rotation speed:	0 – 60 rpm
Tilt:	-90 – 90 deg

Process Module



Canon Anelva NC8000

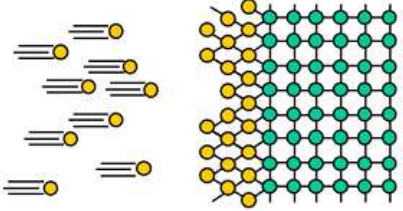
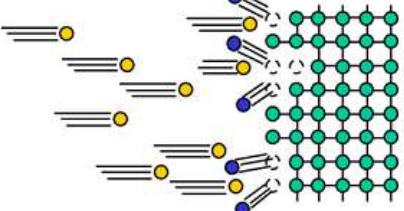
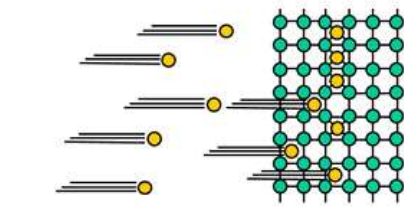
Base pressure : $5.0 \cdot 10^{-4}$ Pa ($<3.8 \cdot 10^{-6}$ Torr)

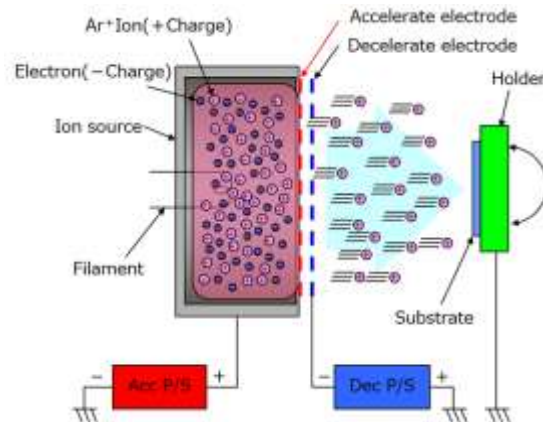
Holder temperature : Water-cooled (wafer temp during process 60 C)

Plasma type : Inductively-Coupled-Plasma

Process gas : Ar (Option: Kr, Xe, Ne, etc.)

Ion-Beam Source Technical explanation

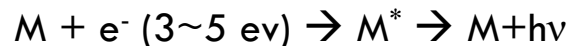
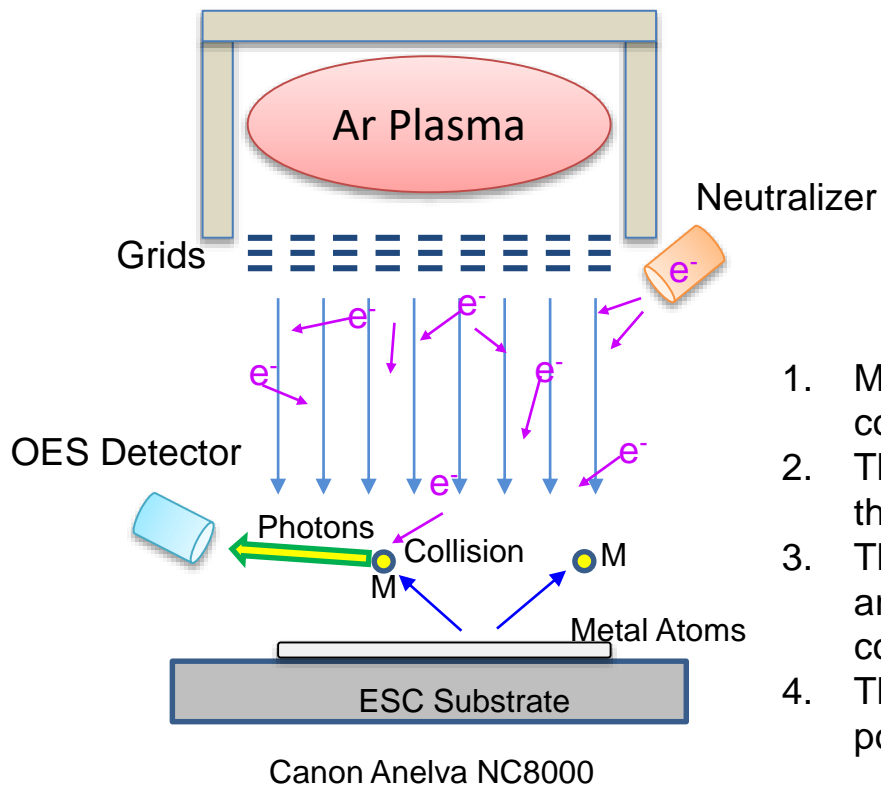
Low kinetic energy	Medium kinetic energy	High kinetic energy
Deposit	Etching	Implant
		
Ion beam film forming machine	Ion beam etching machine Ion beam sputtering machine	Ion beam mixing machine



1. Beam extraction from the ion source.
2. Applying voltage to the accelerate electrode to give a positive potential to the electrically neutral plasma.
3. Ions leaking from the hole opened in the electrode, fly toward the substrate holder.
4. Etching is performed by the flying ions hitting the substrate to be processed.

Source : https://www.yac.co.jp/en/beam/product/beam/detail_01.html

OES Optical-Emission-Spectroscopy Introduction



M : Metal atom

M* : Excited state

1. Metal atoms are activated to excited state by electron collisions.
2. The electron is emitted by the neutralizer and diffuses into the process chamber.
3. The electron energy for the excitation of metal atom is around 5eV, so metal atoms should be excited by electron collision.
4. The excited state is relaxed by photon emission. So the end point can be detected by optical emission spectrometry.