POLYGON PHYSICS

CAMECA
SCIENCE & METROLOGY SOLUTIONS

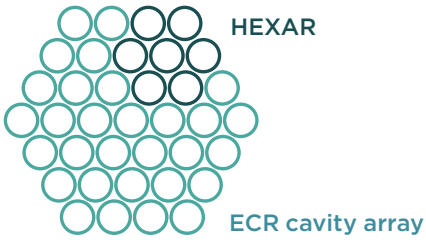
AMETEK

Our ion & electron sources ready for your needs.

HEXAR

Source Principle

HEXAR is composed of an hexagonal arrangement of mini microwave cavities that each operate an ECR discharge at ultra low RF power (a few Watts per cavity at 2.45 GHz). This approach is successful because of the reliability and stability of the ECR plasma, and the fact that the source has no consumables. In addition, it enables control over the current density profile of the beam, in a way inaccessible to standard broad beam sources.



Current Density Control

The current density profile can be varied both in shape and in amplitude through the combination of gas flow, optics, and applied RF power.

Neutralizer

For ion processing of non-conducting substrates a neutralizer can be used to avoid surface charging. CAMECA offers an ECR electron source as neutralizer, which has no consumables like filaments. This neutralizer is based on the same compact ECR technology as HEXAR and is built from a single microwave cavity that is powerful enough to completely compensate the positive ion current.

APPLICATIONS

- Etching
- Cleaning
- Surface modification
- Ion assisted deposition
- Ion beam sputter deposition

MAIN FEATURES

- Filamentless
- Gas: He, Ar, Ne, Kr, Xe, O_2, N, etc.
- Beam energy: up to 2 keV
- Automated source operation
- Mass flow controller
- Oil cooling
- 19” rack-mount electronics
- Fully PC controlled
- Cutsomizable beam optics

OPTION

- Neutralizer

HEXAR ETCHER

(Under development, data June 2017)

- Source flange: ≥DN160
- In-vacuum length: 207 mm
- Gas flow rate: ~10-30 sccm
- Beam diameter: Ø80 mm
- Si etch: ~30 nm/min (1kV/Ar+)
- Glass etch: ~25 nm/min (1kV/Ar^+/e^-)

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