

STS RIE 320 PC

Reactive Ion Etching (RIE) is a dry etching technique which is used to selectively etch thin films in various device structures. It involves a combination of both Physical Etching as well as Chemical Etching. Selection of an appropriate recipe (combination) of gases is an important issue. Typically the etch rates are slow and can be controlled by regulating parameters like the Electrode Bias, applied RF Power, Chamber pressure and flow rate of gases chosen in the recipe. RIE is capable of providing highly anisotropic profiles with reasonable selectivity. It is possible to add custom recipes to etch new materials which are extremely useful for research purposes.

Specifications:

- Cathode dia = 30 cm
- Cathode area = 706.5 cm²
- RF forward power range = 10 to 600 watt
- Chamber pressure max = 500 mtorr

Process Capabilities:

- **Substrates used:** Si
- **Substrate history:** Should **not be** used for resist removal, plasma ashing etc., Also **no** III-V semiconductor or any other Si dopant should **not** be used
- **Substrate size:** 2", 4", 8" Si substrates and small pieces
- **Substrate temperature:** Nil
- **Materials that can be etched:** SiO₂, Poly-Si, SiN,
- **Gases used:** CF₄, O₂, CHF₃, SF₆, CF₄+N₂
- **Chamber base vacuum:** 1mtorr

