

Responses to Questions

1. No mention is made of the basic configuration of this etcher, that is it might be a barrel type, a parallel plate high pressure, an RIE configuration, or one of several other types. Each has specific applicability, see next.

Plasma etcher with an integrated vacuum chamber. For weight reduction, aluminum chamber is recommended. The instrument shall be able to etch 6" wafer or smaller. For gas types, it shall support Argon gas and one extra gas line for oxygen. For uniformity, parallel plate electrodes with RF power supply are recommended.

2. Type of process, gases required, pressure range. Process may be defined by gases and pressure, or type of materials to be etched, and at what rates and uniformity. In most cases, use of toxic or flammable gases requires considerable additional equipment, both on the system and the exhaust lines.

Plasma etch with Argon, Oxygen, and Nitrogen. Operation pressure range is typically from 0.1 mtorr to 1 torr.

3. Chamber. In general, for a high pressure small system, a very small chamber is almost always cylindrical for several reasons. Also, the requirement for aluminum relates almost completely to process needs. Our tabletop system, as most others, is a cylinder, top-loading parallel plate.

The chamber shape is not important. It can be cylindrical or rectangular. The uniformity of plasma etching is important and a uniformity of 5% variation or better is needed. The loading can be either top or side.