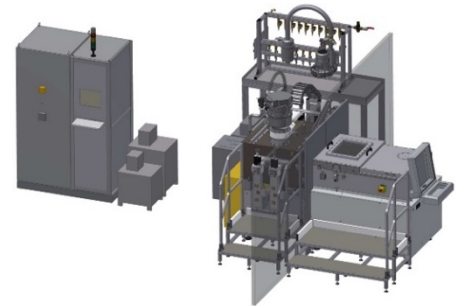


Meyer Burger AK 800 ICP RIE

The Meyer Burger AK 800 ICP etcher is a highly versatile, high-performance plasma etch platform designed for advanced process development and pilot line production for a wide range of materials and industries. Precise control of pressure, gas flows, substrate and side wall temperatures, microwave power density, and DC bias enables complex, repeatable etch profiles. By independently controlling the chemical and physical components of the etch process, the AK 800 delivers exceptional flexibility in etch rate, profile control, anisotropy, and selectivity. This tool is capable of deep trench etching where ion bombardment and sidewall polymerization is important, as well as gentle ashing applications that require a plasma rich in free radicals.

With process gasses that include BCl₃, Cl₂, C₄F₈, CF₄, CF₃H, SiF₆, O₂ and Ar, it enables precise etching of complex gate stacks, metals, dielectrics, metal oxides, TCOs, wave guides, compound semiconductors, organic films and many others. As the previous owner stated, "this tool will etch anything". With a large (450 x 450 mm) cathode, this tool can etch large displays as well as batch processing of traditional semi and compound semi wafers.



Features and benefits

- 2 magnetrons powered by two 2.45 GHz uwave generators delivers energy via 4 independent wave guides to create a plasma rich in free radical concentration which controls the chemical side of the etch process and is important for etch rate and selectivity.
- The two magnetrons are on opposite sides of the process chamber making the (microwave) power distribution very uniform with equal power setting or you can adjust the power setting to acquire a power gradient.
- The cathode is powered by a 13.56 MHz Rf power supply and match to create a DC bias where ions are accelerated towards the cathode and perpendicular to the substrate to provide anisotropy.
- Independent control of the chemical mechanism (uwave) and the physical mechanism (Rf) allows the user ultimate flexibility for profiling, etch rate, ion bombardment and selectivity.
- Process gasses include O₂, Ar, Cl₂, BCl₃, C₄H₈, CF₄, and SF₆ enabling it to etch metals, dielectrics, metal oxides, ITO, compound semiconductors, organics and much more.
- The cathode and chamber wall temperatures are independently controlled via two powerful heat exchangers capable of maintaining temperatures between -50C and 200C.
- Process gasses with lower vapor pressures such as C₄F₈ (used for polymer formation for deep trench etching) and BCl₃ are heated by Quintex parallel heaters and jackets to avoid condensation.
- A facilities rack distributes house cooling water, CDA, N₂, and process gases to the appropriate module. It also includes a SCL K05 blower to cool the waveguides.
- Both L/L and process module use Ebara (600 and 1200m³/hr respectively) dry pumps and an Ebara 1704 1800l/s turbo pump to quickly achieve base and transfer pressures.
- A VAT butterfly valve on the process chamber allows the operator the ability to select the process pressure independent of the gas flow.
- The (450 x 450 mm) substrate carrier is made of graphite and serves as the cathode when transferred and locked into the process chamber. It also contains a heater jacket for precise temp control of the cathode.

Ideal candidates for the AK 800 include universities, research institutes, and fabs working in silicon and compound semiconductors, displays, sensors, photonics, MEMS, and photovoltaic technologies, where a single tool capable of supporting diverse materials and evolving process requirements is a strategic advantage.

