KINETICS AERIS™

AUTOMATED WET PROCESS SYSTEM FOR SURFACE PREPARATION AND ELECTROCHEMICAL DEPOSITION (ECD) APPLICATIONS

- **Flexible** - supports any chemical and substrate size
- **Configurable** - meets process and factory specifications
- **Reliable** - delivers field-proven, high-volume manufacturing

SYSTEM OVERVIEW

The Aeris automated wet process tool from Kinetics is an innovative, production-proven system ideally suited to support both surface preparation and plating applications. Aeris is a fully enclosed automated system where process control, repeatability, throughput and safety are ensured. Standard and custom configurations are available.

KEY FEATURES:

- Advanced process solutions
- Flexible configurations to support any wet chemical application
- Production-proven design
- Supports both single-wafer and batch processing
- 100mm to 300mm wafers plus custom substrates

MARKETS SERVED:

- Advanced Packaging
- MEMS
- Semiconductor
- Photovoltaic
- Compound Semiconductor
- Data Storage
- Medical Device
- BioFluidics

SURFACE PREPARATION APPLICATIONS:

- Gate Module
  - Pre-diffusion clean, metal etch, polymer removal, photoresist strip, nitride strip, silicon etch, oxide etch
- BEOL—Interconnect Module
  - Post-etch clean, photoresist strip, develop, metal liftoff, post-ash clean, post-CMP clean
- Packaging Module
  - UBM etch, photoresist strip, flux removal

ECD PLATING APPLICATIONS:

- Advanced Packaging
  - TSV, Copper Pillar, RDL, WLP, UBM
- MEMS Pattern Plating
  - Cu, Au, Ni, Pt, Ru
- Magnetic Deposition
  - NiFe, NiFeCo
- Electro-etch
- E-less Deposition

www.kinetics.net

+1 510-683-6000
email-usa@kinetics.net

+49 9374-9722-0
email-europe@kinetics.net

+65 6349-1000
asia@kinetics.net

www.kinetics.net
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>CAPABILITY</th>
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<tbody>
<tr>
<td>Applications</td>
<td>Etch, Strip, Develop, Clean, Plating, Electroless</td>
</tr>
<tr>
<td>Chemicals</td>
<td>Acids, Bases, Solvents</td>
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<tr>
<td>System Material</td>
<td>FM4910, Stainless Steel, Polypropylene</td>
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<tr>
<td>SP Process Baths</td>
<td>Recirculating, Heated, Static</td>
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<tr>
<td>Process Bath Material</td>
<td>PFA Teflon™, Quartz, PVDF, Stainless</td>
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<tr>
<td>ECD Process Baths</td>
<td>Electroplate, Electropolish, Electrotech, Paddle Planting Cells</td>
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<tr>
<td>ECD Power Supply</td>
<td>Single- or Multichannel, DC, Pulse</td>
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<td>Rinse Baths</td>
<td>QDR with spray options, Cascade</td>
</tr>
<tr>
<td>Substrates</td>
<td>Semiconductor Wafers from 100mm to 450mm, Optic Lens, Vascular Stents, Flat Panels, Custom Substrates</td>
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<tr>
<td>Process Bath Capacity</td>
<td>Single-Wafer and Batch Processing</td>
</tr>
<tr>
<td>Third-Party Certifications</td>
<td>SEMI S2/S8, Seismic, CE, Electrical</td>
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<tr>
<td>Automation Options</td>
<td>Load Drawer, Load Port, EFEM</td>
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**FACILITY REQUIREMENTS**

<table>
<thead>
<tr>
<th>UTILITY</th>
<th>REQUIREMENT</th>
<th>CONNECTION TYPE</th>
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<tbody>
<tr>
<td>DI Water</td>
<td>2-5 GPM @ 30-80 psi</td>
<td>Supply 1” FNTP (Return 1/2”)</td>
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<tr>
<td>N₂</td>
<td>5-10 SCFM @ 70-100 psi</td>
<td>1/2” Quick Connect Bulkhead</td>
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<tr>
<td>CDA</td>
<td>10-20 SCFM @ 70-100 psi</td>
<td>1/2” FNTP</td>
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<tr>
<td>Exhaust</td>
<td>750-1000 SCFM</td>
<td>10” Diameter</td>
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<tr>
<td>Power</td>
<td>208-400 VAC, 3 phase, 15-60 A</td>
<td>3/4” Conduit</td>
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Will vary to meet customer specifications

**CONTROLS:**
- PLC control system with HMI touchscreen GUI
- Recipe editor and storage capability
- Data logging with historical and real-time data charting
- Integrated UPS backup protection
- Multilevel password protection
- Out-of-tolerance condition alarms
- Network and Ethernet capability

**SAFETY FEATURES:**
- Segregated electrical and chemical compartments
- Access doors and robot interlocks
- Audible and visual warnings and alarms
- Leak detection and over-temperature protection
- Local and remote EMO

**BUILT TO COMPLY:**
- FM-4910
- SECS/GEM
- SEMI S2 and S8
- CE