KINETICS CELERATM

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

• Flexible - supports any chemical and substrate size
• Configurable - meets process and factory specifications
• Economical - low cost for both R&D and production

SYSTEM OVERVIEW

The Celera manual wet process tool from Kinetics is a low-cost system ideally suited to support surface preparation and electroplating applications. Celera can be configured to provide virtually all types of chemical processing covering sub-ambient to high-temperature processes. Standard and custom configurations are available.

KEY FEATURES:

- Advanced process solutions
- Flexible configurations to support any wet chemical application
- Front- and rear-access configuration options
- Supports both single-wafer and batch processing
- 100mm to 300mm wafers plus custom substrates

SURFACE PREPARATION APPLICATIONS:

- FEOL—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

MARKETS SERVED:

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

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
SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>CAPABILITY</th>
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<tbody>
<tr>
<td>Applications</td>
<td>ECD, EP, Etch, Strip, Develop, Clean</td>
</tr>
<tr>
<td>Chemicals</td>
<td>Acids, Bases, Solvents</td>
</tr>
<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, Megascanon, Ultrasonic</td>
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<tr>
<td>Process Bath Material</td>
<td>PFA Teflon™, Quartz, PVDF, Stainless Steel, Natural Polypropylene</td>
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<tr>
<td>ECD Process Baths</td>
<td>Electroplate, Electropolish, Electrotech, Paddle Planting Cells (vertical and horizontal)</td>
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<tr>
<td>ECD Power Supply</td>
<td>Single- or Multichannel, DC, Pulse, Pulse-Reverse</td>
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<tr>
<td>Rinse Baths</td>
<td>QDR with spray options, Cascade</td>
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<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 (baths of 25-200 wafers)</td>
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<tr>
<td>Third-Party Certifications</td>
<td>SEMI S2/S8, Seismic, CE, Electrical Safety</td>
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<tr>
<td>Automation Options</td>
<td>Manual Operation</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 @ 60-80 psi</td>
<td>1/2” Quick Connect Bulkhead</td>
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<tr>
<td>CDA</td>
<td>10-15 SCFM @ 60-80 psi</td>
<td>1/2” Quick Connect Bulkhead</td>
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<td>Exhaust</td>
<td>650-750 SCFM</td>
<td>8” Diameter</td>
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<tr>
<td>Power</td>
<td>208-400 VAC, 3 phase, 10-40 A</td>
<td>3/4” Conduit</td>
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Will vary to meet customer specifications

CONTROLS:
- Microprocessor touch panel
- Optional PLC control system with HMI touchscreen GUI
- Recipe editor and storage capability
- Data logging with historical and real-time data charting
- Multilevel password protection
- Out-of-tolerance condition alarms

SAFETY FEATURES:
- Segregated electrical and chemical compartments
- Process bath lip exhaust
- 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