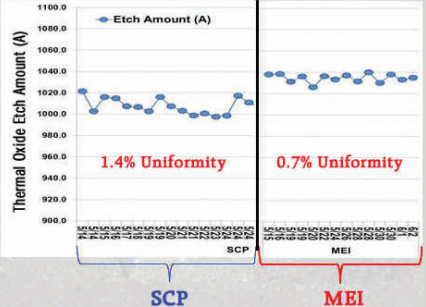
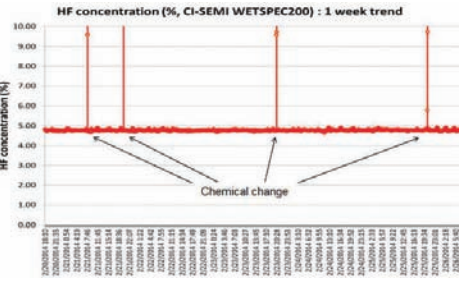
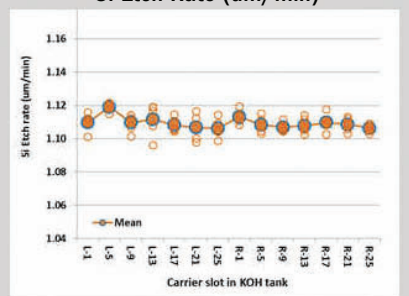


High Uniformity Metal Etch Solution

<p>BOE Thermal Oxide Etch</p>  <p>Thermal Oxide Etch Amount (Å)</p> <p>Etch Amount (Å)</p> <p>1.4% Uniformity</p> <p>0.7% Uniformity</p> <p>SCP</p> <p>MEI</p>	<p>NIR Concentration Control</p>  <p>HF concentration (%; CI-SEMI WETSPEC200) : 1 week trend</p> <p>HF concentration (%)</p> <p>Chemical change</p>	<p>WIW, WTW & LTL Uniformity < 0.5 % Si Etch Rate (um/min)</p>  <p>Si Etch rate (um/min)</p> <p>Carrier slot in KOH tank</p> <p>Mean</p>
<p>Precision Etch</p> <p>Consistent Results — < 1% WTW, WTW, LTL Uniformity</p>	<p>Superior Control</p> <p>Concentration Controls — Etch Rate Stability, NIR Based Monitoring</p>	<p>Uniformity</p> <p>Etch Control Through Advanced Hardware, Process Understanding & Software Execution</p>

Lower Cost, High Performance Etch

Etch Control through Advanced Hardware, Process Understanding & Software Execution

Pattern metal machining through superior immersion system design utilizing integrated wafer rotation and precise micro bubble agitation for superior wetting and uniform etching of noble metal layer patterns, Si, Si₂ and III-V materials.

Consistent Etch Performance

- Via closed loop process control
- Advanced tank designs and flow controls
- Integrated wafer rotation
- Rapid robot transfer to rinse in less than five seconds

Etch Stability Concentration Control

- Hyper accurate concentration Controls (ABB, Horiba, CI Semi)
- Hyper accurate spiking Capability (chemical & DI)
- Automatic compensation for losses due to consumption and evaporation

Higher Throughput

- Than single water or spray tools

Lower Chemical Usage

- Savings vary by application

Proven Superior Etch Uniformity

150mm–200mm

Nobel Metal

- Wafer to wafer < 2%
- Within wafer < 2%
- Lot to lot < 2%
- Tank to tank < 1%

Si, Cu, CuAs, SiO₂ < 1%

- Wafer to wafer < 1%
- Within wafer < 1%

Applications

- III-V materials
- Metal pattern etch (2–5 um features)
- Nobel metals
- Cu and TiW etch
- Si etch
- SiO₂ etch

No Contamination

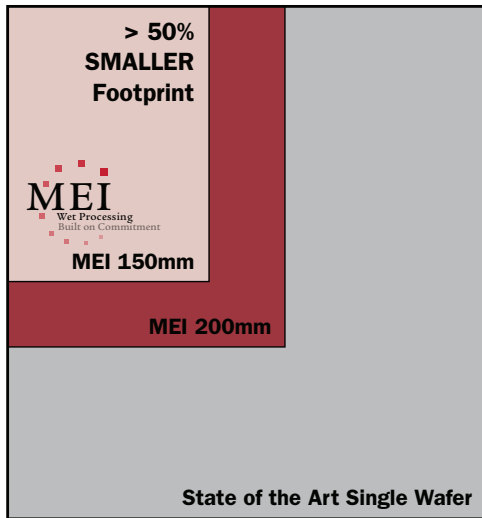
- Particle neutral at 0.12 μ
- Integrated Marangoni dryer



MEI Wet Processing Systems & Services, LLC
 3838 Western Way NE
 Albany, OR 97321
 Phone 1-541-917-3626
www.meillc.com

TruEtch

Small Footprint



Immersion Tools Generally Have Much Smaller Footprints Than Comparable WPH Single Wafer Tools

Increased Reliability

- MTBF < 1500 hr (Semi E10)
- Avg MTTR < 1 hr
- Higher uptime > 95%
- Reduced scrap
- No complex wafer handling

MEI Solves Key Issues with Spray Au Pattern Etch

- Poor wafer to wafer uniformity
- Poor within wafer uniformity
- Rapid chemical depletion
- Short tank life and high chemical usage
- Low throughput per square foot
- Smooth metal coating with pretreatment step
- Etch residue removal

MEI Platform Advantages

- High performance, shared control system, shared facilities, smaller footprint

Software Flexibility

- User programmable configuration
- Recipes, speeds, chem control

Automation

- Rapid transfer from etch to rinse
- Agitation flexibility

Reliability

- Field proven designs



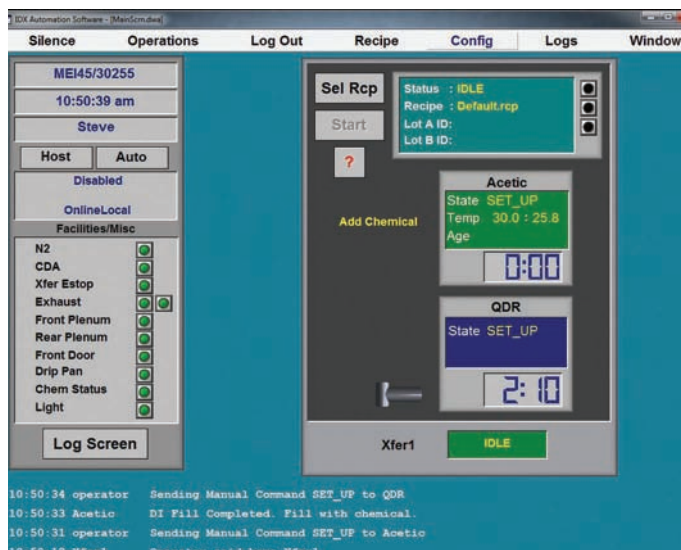
Superior Process Control

- SECS/GEM compliant
- Recipe editor
- Advanced process controls
- Unlimited user/permission levels
- Easy-to-use, touch-screen interface
- Error logging and data graphing
- User programmable configuration
- Recipes, speeds, chem control
- Barcode reader compatibility
- Remote access compatible
- I/O monitor displays status

Analog Control

Analog sensing enables software to control:

- In-tank blending
- Blending ratio creation
- Control DI water inject
- Control temperature
- Recirculation flow
- Spiking volume



Etch Control Through Advanced Hardware, Process Understanding and Software Execution

MEI's Award Winning Service and Support

MEI Global Field Service Team

- Final test and verification
- Standard one year parts and labor warranty
- Two year optional warranty
- Full field service support, on-site warranty coverage
- On-site training provided

