



Mega Fluid Systems

Research & Development Laboratory

STATE OF THE ART LABORATORY

Mega Fluid Systems' lab includes precision scientific equipment to recreate and test actual process chemistries to ensure more robust solutions for chemical and slurry delivery. A dedicated, full-time team of researchers with multi-discipline engineering and technical backgrounds perform the full gamut of applications-specific equipment and protocol testing, process chemistry testing, materials studies, and flow verification.

PARTNERING

Mega Fluid Systems' R&D group partners with OEMs, IC manufacturers, slurry makers and others in order to develop solutions for advanced cleaning, CMP, immersion lithography, and other wet process applications needed to address diverse liquid applications challenges. We benchmark existing equipment solutions along with next generation slurries, processes and components to ascertain potential performance gaps and identify process-enabling solutions.

By engaging Mega to engineer solutions outside of their fabrication plants, our customers have access to an industry-leading dedicated resource while keeping their own tools and manufacturing facilities in full production.

SYSTEM CONFIGURABILITY

Mega product configurations can be modified for testing to match customer reference configurations such as:

- ◆ Automatic titration and replenishment
- ◆ Inline concentration measurements
- ◆ Inline densitometers, in line pH probes, and
- ◆ Integrated particle counters.

Two 500' global distribution loops with customizable points-of-use configurable to the equivalent of 16 lpm allow slurry blends to be tested for short or long periods within a transport system. This capability provides a sub-fab equivalent for studying blended slurry performance and slurry health in real application configurations. In addition, these can be combined into a single 1,000 foot global loop for longer hydraulic distance studies.



- ◆ Configurable global loop (1000 feet max) with up to 16 points at up to 19 lpm consumption
- ◆ UPW, bulk slurry drum and carboy compatible, high purity gases (N₂ and He), Hydrogen Peroxide supply
- ◆ Extensive component, pump, fitting, instrumentation, tubing, and data acquisition hardware
- ◆ Bulk chemical supply totes/drum feed stations, drum mixers, and
- ◆ Ventilated hood.



METROLOGY

- ◆ Wide variety of flow, pressure, and temperature instrumentation
- ◆ Particle counters
- ◆ Particle size distribution
- ◆ Large undiluted particle counter
- ◆ Automatic titration systems
- ◆ Inline concentration monitors
- ◆ Inline densitometer
- ◆ pH probes
- ◆ Bench top Brookfield Viscometer with temperature control bath
- ◆ Inline turbidity, and
- ◆ Inline conductivity.

WET CHEMISTRY CAPABILITIES

- ◆ pH
- ◆ Conductivity
- ◆ ORP
- ◆ Viscosity
- ◆ % solids
- ◆ Titration
- ◆ sonication
- ◆ Mass, and
- ◆ Centrifugal separation.

CONTROLS ENGINEERING

PLC code development lab with:

- ◆ Rockwell (A-B), Siemens, Omron, GE Fanuc, National Instruments equipment, and
- ◆ SCADA systems and sub-systems.



Mega Fluid Systems, Inc.
 9398 SW Tualatin-Sherwood Road
 Tualatin, OR 97062
 Telephone 971.277.9000
 Facsimile 971.277.9010
 www.megafluidsystems.com

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