

Complete Texturing/Cleaning/Etching Metrology

QualiSurf® PV

Control Your Chemical Process

When you select In-process analysis equipment for a critical manufacturing step, you need confidence in your results and follow-up actions.

ECI's expertise and unparalleled experience combining multi-disciplinary analytical techniques for accurate and efficient in-process analysis is the reason for our proven leadership.

Texturing and other wet solutions are constantly changing. Analysis by Titration or other wet methods is accurate but time consuming and requires expensive reagents. Non-reagent Spectroscopic techniques can be used to control the process much more efficiently with no cost per analysis. However, Texturing, Cleaning and Etch processes use highly concentrated solutions and generate particles and byproducts known to interfere with spectral analysis. By using the most advanced spectroscopic cell design on the market, combined with ECI's automated validation module, the system provides the most stable and accurate real-time measurement of your Texturing bath.



Before QualiSurf PV, thousands of wafers would be manufactured under uncertain conditions between lab analyses. With QualiSurf PV, you can be confident that your Texturing bath stays within your specifications.

In-line Metrology for Wet Processes

Texturing, Single-Side Edge Isolation, Si Etch, PSG Removal



We Keep The Chemistry Right.



A real time analyzer for Photovoltaic Texturing, Etching and Cleaning - Measuring Concentrations and Process Performance

Features and Benefits

- Reports individual concentrations and by-products in multiple-component chemistries, reflectivity, and etch rate
- Superior accuracy and reproducibility
- Innovative cell design for fluctuating texturing conditions
- Automated validation and calibration
- Safe enclosure with easy process tool connection
- Feedback signals for automatic closed loop control of process equipment
- Supports multiple baths
- Minimal PM requirements
- Fast and easy startup

Typical Applications

• Texturing

--Isotropic Acid Etch:

- HF/HNO₃/H₂SiF₆
- HF/HNO₃/H₂SO₄/H₂SiF₆
- HF/HNO₃/Organic Acid/ H₂SiF₆

--Anisotropic Alkaline Etch:

- NaOH/Na₂SiO₃
- KOH/K₂SiO₃
- KOH/IPA/K₂SiO₃
- NaOH/IPA/Na₂SiO₃
- KOH/Organic Acid/K₂SiO₃

• PSG Glass Etch

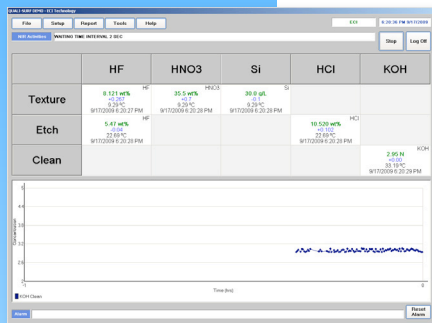
- HF/H₂SiF₆

• Edge Isolation

- HF/HNO₃/H₂SiF₆

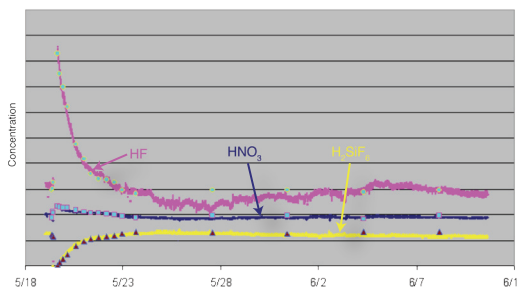
• Clean

- HF, HF/HCl, KOH

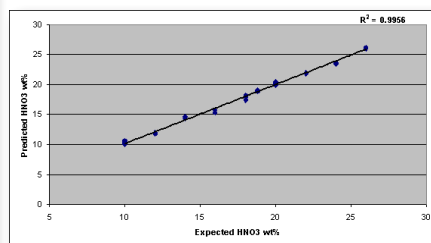


Texturing Solution Analysis Main Screen

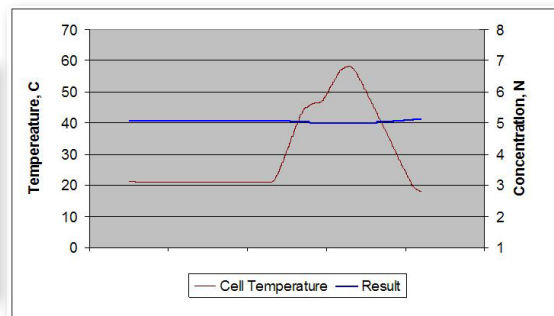
Note: H₂SiF₆, Na₂SiO₃, and K₂SiO₃ are reaction products and not added into a fresh bath.



Typical Texturing Solution Analysis



HNO₃ Calibration Curve



KOH Analysis Through Temperature Changes

ECI can develop analyses for customers' proprietary applications.

Backed by ECI Global Support

For additional information, call or write:
 ECI TECHNOLOGY, INC.
 60 Gordon Drive, Totowa, NJ 07512 U.S.A.
 Tel: 973•890•1114 Fax: 973•890•1118
 Email: info@ecitechnology.com
 Web site: www.ecitechnology.com
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