Q-View

White Light Interferometer/SPM

One Instrument — Two Technologies

ON A BRIGHT DAY IN SANTA CRUZ, one of our bright scientists had a bright idea. *"Why not leverage our interferometric technology to bring the many benefits of microinterferometry to the community of SPM users,"* he thought. And thus was the spark of inspiration that has culminated in the **Q-View.** This industry first, brings the "point and shoot" speed and ease of use of a microinterferometer to the Nobel Prize winning scanning probe microscope platform in a single fully integrated instrument. Move seamlessly between the interferometer module and the AFM scanner. **Q-View** alleviates the frustration that we all feel when our AFM simply won't quite let us measure features that are just a little bit too big. Thank goodness for bright days in Santa Cruz and the bright scientists that they inspire.

AMBiOS TECHNOLOGY

- High Speed Large FOV – Capture a 500 µm image in seconds
- High resolution sub-angstrom surface characterization in SPM mode
- Quick change Macro to Micro View — Q-View Interferometer module to Open Loop and Closed Loop Metrology SPM Scanners
- Q-View module provides phase measuring and scanning white light Interferometry
- Two technologies — SPM/ Interferometer — same software platform
- Q-View Interferometer mode includes Auto-Focus for quick measurement setup
- Q-View Interferometer module can retrofit to existing Q-Scope AFM's

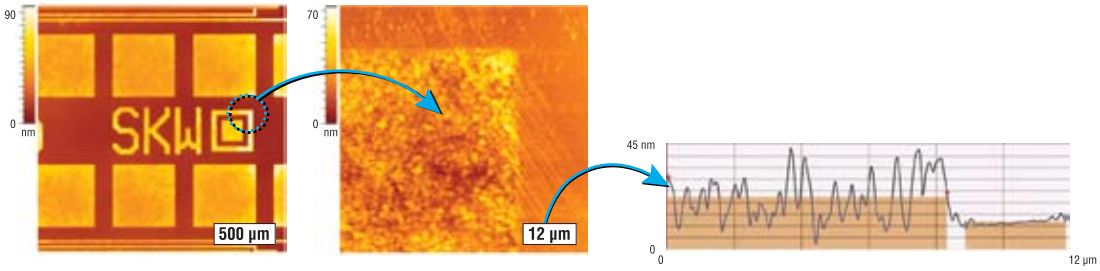
Preliminary

Q-View Interferometer Module

Q-Scope users can purchase just the Q-View Module to add powerful interferometer capability to their SPM. Check your system's configuration with Ambios Technology, Inc. to determine what is required to upgrade your Q-Scope with Q-View.

Macro View – Micro View

The image on the left was taken using Q-View the new interferometric module for the Q-Scope AFM. This 500 µm surface area image with nanometer resolution took only a few seconds to obtain and provides a clear overview of this sputtered metal film on silicon. This film may hint at slight roughness, however, overall it appears smooth and continuous. The magnified image on the right was taken by switching from Q-View to AFM mode and taking a 12 µm scan on the circled area. What appeared to be a smooth solid film is actually granular with grain sizes of 200 nm in diameter with grain boundaries running down to the underlying silicon surface. One instrument — Two views.



Q-View General Specifications

SPECIFICATION	VALUE
Vertical Range	*100 microns*
Vertical Resolution	*0.1 nm*
Step Height Repeatability	*<1.0 Å or 0.1% of step height in smooth mode, <1.0 nm or 0.1% of step height in texture mode*
Modes of Operation	*Smooth mode – phase measuring Texture mode – scanning white light*
Maximum Sample Size	*150 mm (X) x 150 mm (Y) x 22 mm (Z)*
X-Y Movement	*+/- 6 mm*
Z Stage Movement	*22 mm*
Vibration/Environmental Isolation	*IsoChamber*
For Upgrade Purposes	*Minimum computer specifications: Windows XP™, 2.0 USB, 1.0 GHz clock speed, 500 Mb RAM*

Objective Lenses

Magnification	*10x Mirau*	*20x Mirau*	*50x Mirau*
Measurement Area	*500 x 500 µm*	*250 x 250 µm*	*100 x 100 µm*
Sampling Interval	*1.0 µm*	*.5 µm*	*.2 µm*
Optical Resolution	*.93 µm*	*.70 µm*	*.51 µm*
Depth of Focus	*3.0 µm*	*1.7 µm*	*.9 µm*
Working Distance	*7.4 mm*	*4.7 mm*	*3.4 mm*
Numerical Aperture	*0.30*	*0.40*	*0.55*

Computer *Windows® Intel© Processor with TFT Flat Panel Monitor.*

Software *Full featured, multi-tasking data acquisition software operates under Windows XP and is compatible with standard networking environments, printers, and productivity software. Software upgrades are free for the lifetime of the product. ScanAtomic™ real time software and Q-Port™ post process image rendering software platforms run both the Q-View Interferometer Module and SPM.*

Warranty *One year parts and labor.*

AMBiOS TECHNOLOGY

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