A Nanonics SPM Solution

The **Academia™ System**

AN AFFORDABLE RESEARCH GRADE AFM SYSTEM

NANONICS IMAGING Ltd.

- **HIGH QUALITY IMAGING DISPLAYED IN REAL TIME**

- **EASY TO OPERATE**

- **SIMPLICITY AND ELEGANCE BY DESIGN**

- **FREE OPTICAL ACCESS FROM ABOVE**

- **LABVIEW SOFTWARE AND CONTROLLER**

Complete Package

After carefully reviewing the needs of our customers, the Nanonics team of designers and scientists have put together a package designed to meet the three criteria of reliability, simplicity and affordability.

With the Academia™ AFM head, the customer receives a complete package consisting of AFM controller, familiar LabVIEW based software package, computer and binocular optical microscope for viewing the sample during the scanning process.

To ensure complete customer satisfaction, Nanonics has a comprehensive customer support policy. This starts with three days of on-site installation and training from one of our expert application scientists and continues throughout the customer's use of the system. Specialist advice and support relating to the specific research being conducted with the system is also provided. Upgrades to other Nanonics SPM packages are available to Academia™ users.

High Quality Imaging Displayed in Real Time

The Academia™ succeeds in producing scanning images of the highest quality. We achieve lower noise levels by minimizing the mechanical parts of the system and simplifying the electronics of the controller. This raises the overall signal to noise ratio, therefore enabling fainter signals to be built into the images.

It is the small dimensions of our scanner combined with our high signal to noise ratio that allows us to produce high resolution images quickly and repeatably.
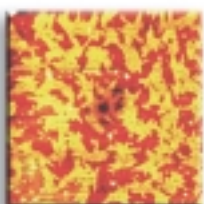
Easy to Operate

Our years of customer interaction have taught us how to make a system user friendly. With our familiar LabVIEW software, the customer will be able to produce quality images immediately upon installation.

Changing the scanning probe is quick and effortless with the Academia's flip-top scan head. The probe can be removed and a new one replaced with no tools and no disturbance to the sample.
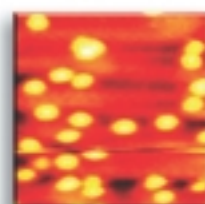
Easy tip exchange
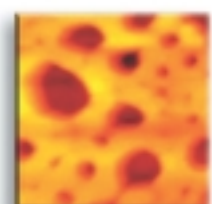
4.5 x 4.5 micron
Polymer surface

0.9 x 0.9 micron
DNA on mica

50 x 50 micron
TFT LCD Display

1 x 1 micron
30 nm diameter gold balls

5 x 5 micron
Composite polymer

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Simplicity and Elegance by Design

Quality, durability and ease of use are most often the result of elegantly simple design solutions. Our experience, gained from years of AFM development and customer interaction, has resulted in an AFM scan head assembly with fewer individual components than any AFM system available today. This provides for a more robust system, moving AFM instrumentation to a higher level of reliability and consistency, which is increasingly demanded by today's AFM operator.

The Academia™ scan head has a unique open architecture and the most user friendly design of any research grade AFM system.

Free Optical Access from Above

As a direct consequence of Nanonics superior design, the Academia™ can be used as an add-on AFM to a customer's existing microscopy set-up.

The top down optical access, characteristic of the Academia™ system, allows the microscope head to be seamlessly placed under the objective lens of any upright microscope, without restricting any of the functionality of the microscope or objective.
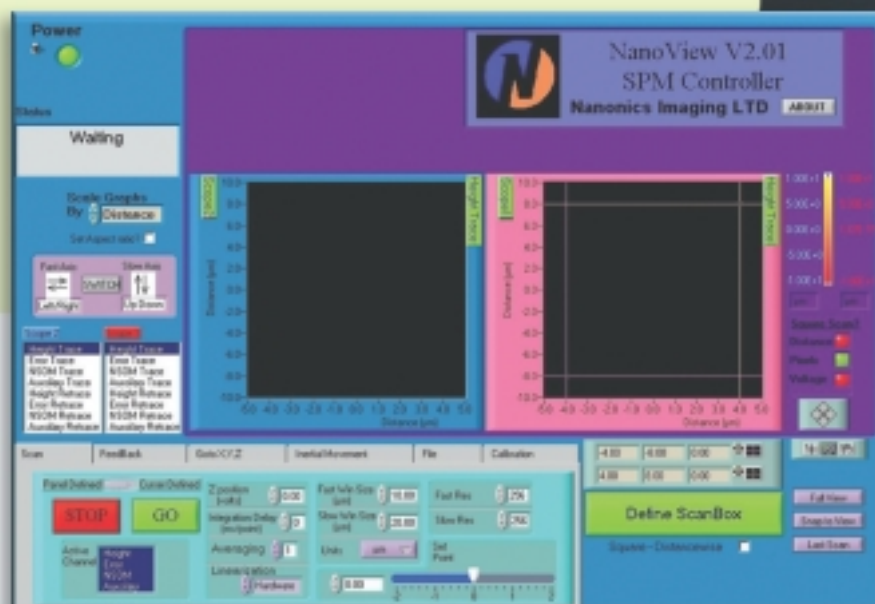
LabVIEW Software and Controller

The Academia™ system is packaged with the Nanonics developed AFM controller and LabVIEW software, both designed for ease of use. Our customers want to be able to start producing quality images as soon as the system is installed. This is precisely what they can do with the familiar LabVIEW software format.

One of the main advantages of using a LabVIEW package is the ability to continue writing additional modules according to the user's specific requirements. This aspect of the Academia™ system provides the ultimate flexibility in system software.

Affordability

The key aspect to the Academia™ system is a low price tag attached to a high quality research grade AFM. The Academia™ shows that reliability and quality can be affordable for today's market.

The Academia™ System

System Specifications

Modes of Operation

Atomic Force Microscopy	Contact, non-contact, intermittent-contact
Feedback Mechanism	Optical beam deflection

Scanning/Sample

Scan Range	70μm XY, 5μm Z (10μm XY upon request)
Step Size	<1nm for 70μm scanner, <0.1nm for 10μm scanner
Maximum Sample Size	15mm X 15mm

Probes

AFM Probes	Any commercially available AFM probes including cantilevered or pulled glass probes
Specialized Probes	Cantilevered probes for electrical or thermal measurements, AFM controlled Nanopens for gas and liquid chemical delivery. Custom probes available on request

Optics

Viewing Optics	Binocular microscope with boom stand

Controller/Software

Controller	Nanonics AFM controller
Software	User friendly LabVIEW based SPM software including software linearization