

Our heart beats for  
nanotechnology and  
surface science.

# Best Selection in Scanning Probe Microscopy

Cutting Edge Technology for your Application.



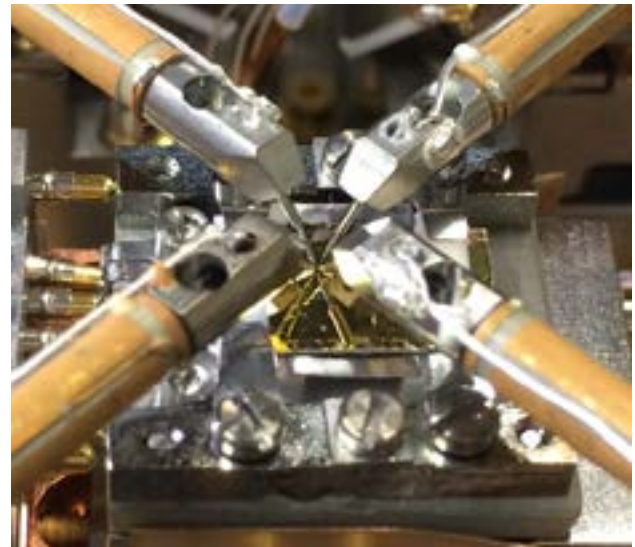
RHK PanScan Freedom LT SPM

**The World's First Closed-Cycle Cryogen-Free System**

The PanScan Freedom LT is a true breakthrough in SPM technology. It gives all the advantages of low temperature STM/AFM with none of the typical constraints. The cryogen-free system allows an unlimited duration of your experiment. Atomic resolution and superb Scanning Tunneling Spectroscopy is achieved down to 9K (sample and tip) with XY-drift rates as low as 0.01 nm/hour and z-drift rates as low as 0.01 nm/day. This easy-to-use compact turnkey system is offered in standard or customized configurations.



The PanScan Head is also offered as a kit for integration into third party cryostats with cooling to the mK range or in high magnetic fields.



RHK QuadraProbe SPM Platform  
**Unprecedented Measurements**

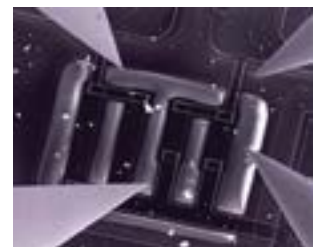
The QuadraProbe, a sophisticated, four-probe, low temperature UHV AFM/STM system, is designed and outfitted to be the ideal platform for electrical measurements and electron transport studies on devices such as nano-wires and carbon nanotubes.

Sample and probes can be cooled to LHe temperatures. Each of the up to 4 probes can be independently positioned under the guidance of a SEM, and each is capable of atomic resolution. Four STM tips are standard. As an option, any number of these probes can be converted in vacuum to AFM-qPlus sensor for use on insulating or conductive samples.

Unique applications for the QuadraProbe include cathode luminescence, coupling microwave signals to the tips, and applying a magnetic field to the sample.



Probes over nanowire



Probes over circuit



Manipulation of nanotube





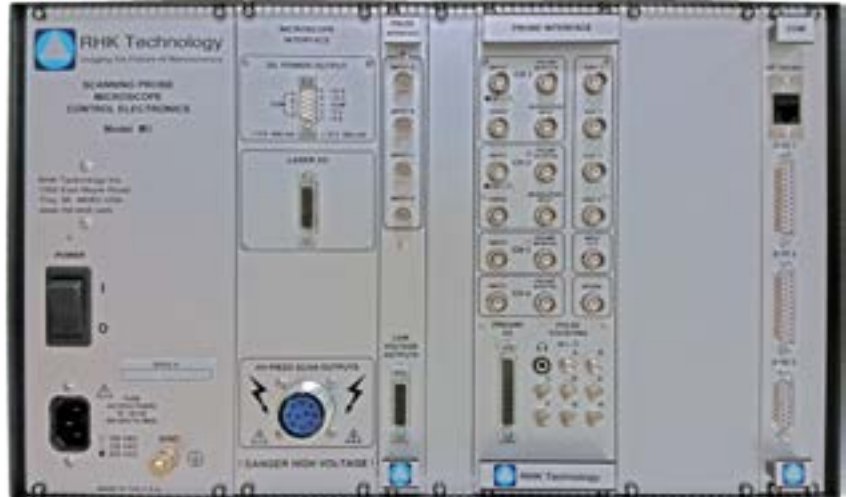
RHK “R9plus”

**Flexible SPM Control System**



“R9plus” is the new standard in control electronics and software for homebuilt and various commercial SPM scan heads. The fully integrated package includes scan generation, feedback loops, PLLs, lock-in-amplifiers, HV-amplifiers, and more – all in one hardware box. 100 MHz sampling rates and less than 8 nV/√Hz noise are examples of the high-end specifications.

“R9plus” features innovative functions such as multi-speed data paths, time-based data acquisition, and fast response times for process control. Ease of use for beginners is combined with unlimited flexibility for experts.



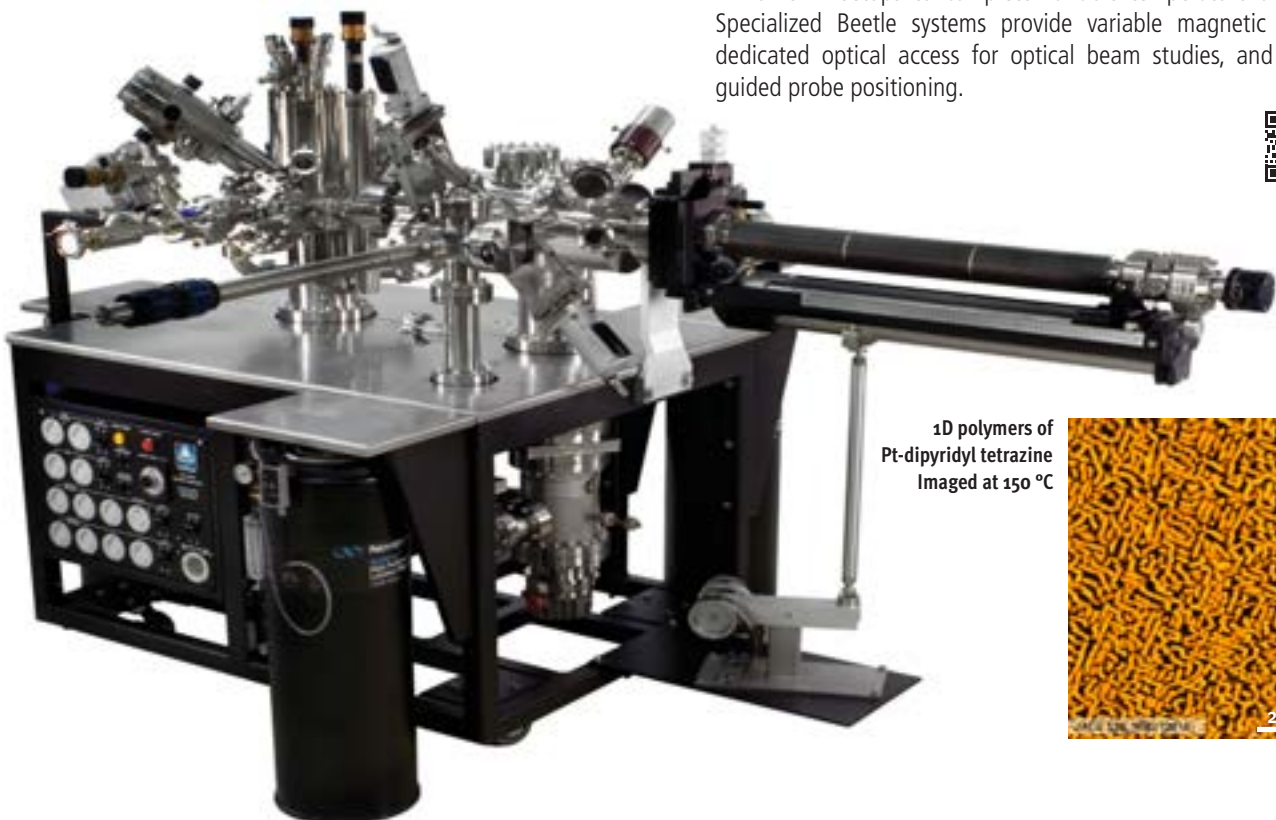
Full Digital integration of: 8 low noise HV amplifiers, 2 PLLs, 4 Lock-ins, 8 Feedback Loops, 12 ADCs, 20 DACs, 4 Digital Oscillators. All synchronized by single 100 MHz clock.

RHK UHV Beetle VT SPM

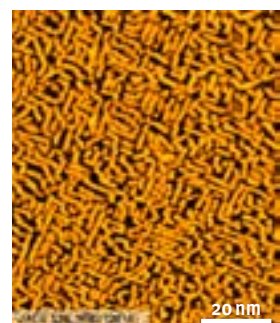
**High Temperature Solution**

The new Beetle „Therma” extends high temperature STM and AFM imaging to sample temperatures up to 1000 K. Both, contact mode and non-contact mode AFM functionality is given as well as STM.

The thermally and mechanically stable design allows ultra-low drift rates (1 nm/min). The RHK Beetle is available in a variety of configurations from kits for atmospheric and liquid operation, HV or UHV setups to complete variable temperature designs. Specialized Beetle systems provide variable magnetic fields, dedicated optical access for optical beam studies, and SEM-guided probe positioning.



1D polymers of Pt-dipyridyl tetrazine  
Imaged at 150 °C





## TT-2 AFM

# Bridges the Gap Between Price and Performance

## Increased Performance at Stable System Price

- Stage + control system
- Open design
- Zoomable video microscope
- Easy probe exchanger
- Various scanning modes
- Software with open source code
- Full documentation



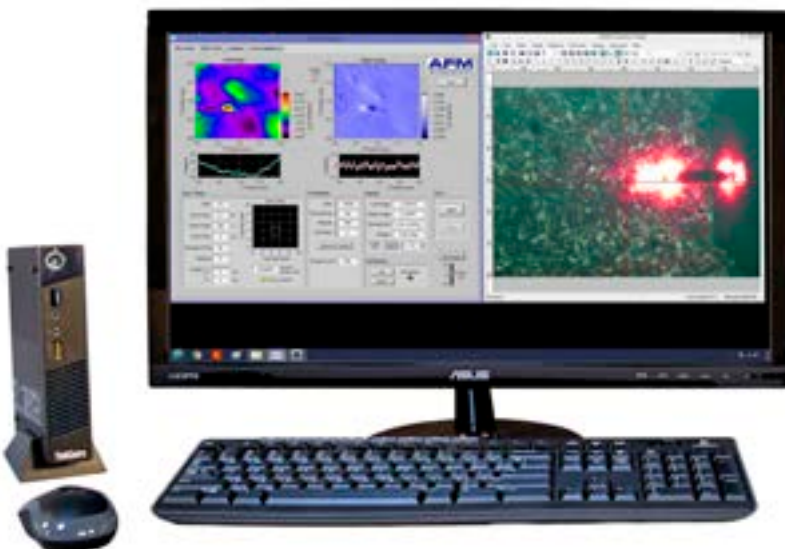
There is substantial and growing demand by students as well as professionals for Atomic Force Microscopy Training & Education. AFMWorkshop, a company founded by Dr. Paul West, a pioneer in AFM technology, strongly supports their customers with construction and application workshops worldwide.

AFM Workshop builds AFM systems on the basis of intelligent and cost effective designs without sacrificing performance. The open hardware and software architecture allows instrument innovators to create their own AFM experiments or to embed the AFMs into their lab instrumentation environments.

Over 200 TT AFMs are world-wide successfully used in research groups from both academia and industry.

Now the second generation tabletop AFM, the "TT-2 AFM" has been released. It has all the important features and benefits required for demanding projects. Enhanced high resolution imaging and automated sample focusing with a zoomable integrated video-microscope are only two of the various improvements.

Other models like the LS-AFM are used in life science applications where an inverted optical microscope is required for locating cells or other bio-materials on a surface. Primary applications for the NP-AFM include process development and process control of technical samples.



## Benefit from our experience and our broad range of test and measurement capabilities

### Optical 3D-Microscopy

- Digital Holographic Microscope
- Confocal and Interferometric Profilers
- Optical Interference Microscopes
- MEMS-Solutions / Vibrometry
- Holographic Life Cell Analysis
- Characterization of Transparent Structures
- Spectroscopic Reflectometer

### Stylus Profilometer

- 3D Surface Profiler
- Development Series Profilers
- Production Series Profilers
- 2D/3D Stress Analysis

### Material Characterization

- Mechanical Tester/Tribometer
- In-situ SEM-Indenter
- LEED / Auger Spectrometers

### Thin Films

- Spin Coaters
- QCM Thickness Measurement
- EIES Deposition Control

### Nano-Particles

- Darkfield and Hyperspectral Microscopy
- Mapping of Nano-Particles in Tissue
- Magnetic Nanoparticle Characterization
- DLS Nano-Particle Measurement
- Measurement of Nanoscale Particles in Aerosols

### Measuring and Control

- Gas Flow Measurement
- Vacuum Measurement
- Vacuum Feedthroughs and Connectors
- Magnetic Field Measurement
- Digital Integrator
- Accelerator Magnet Mapping

### FluidFM® Technology for Single Cell Manipulation

- FluidFM® BOT System

### Correlated Light and Electron Microscopy

- Fully Integrated SEM and Fluorescence Microscope

### Scanning Probe Microscopy

- Nano metrology NX-AFM
- Research-grade XE-AFM
- Scanning Tunneling Microscope
- Tabletop AFM
- Nanoprofiler-AFM
- Life Science AFM
- Open Architecture AFM
- Large Sample AFM
- Automated AFM
- Educational AFM
- NX-Hivac SSRM
- Variable / Low Temperature SPM
- Cryogen-free PanScan Freedom LT-SPM
- QuadraProbe UHV LT-SPM
- R9plus SPM Control System
- AFM Cantilevers and Calibration Gratings

Are you looking for solutions? Do you wish to receive an offer?  
Please contact one of our offices.



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