Integrated Software

Seamless system control and data acquisition, and the most advanced data analysis and processing suite

Simple and Fast

- One-click cantilever alignment, frequency tuning and optimization, requiring no manual adjustments.
- Easy cantilever exchange without affecting the sample.
- Fast and intuitive Raman laser to AFM tip alignment.
- Ultra-fast simultaneous SFM and Raman measurements.

Powerful

- High numerical aperture objectives from both top and side for best co-localized spatial resolution and best TERS collection efficiency.
- High-throughput optics and spectrometer.
- High spectral resolution with the LabRAM HR spectrograph.
- Broad range of detection wavelengths, from deep UV to infrared.
- Simultaneous SFM and spectroscopic measurements.
- Powerful processing software suite for both SFM and spectroscopic data, including Multivariate Analysis and spectral database lookup.

High-throughput optics and side coupling

High performance without active vibration isolation

Visual confirmation of Raman laser alignment in all modes

Integrated Multivariate Analysis module: high level analysis at a touch of a button, PCA, MCR, HCA, DCA.

Powerful dual optical scheme, easy switching.

Closed-loop, short path-length Raman laser alignment for long-term stability

Dual optical scheme, easy switching.

Compact holder for easy probe exchange.

High-numerical-aperture objectives for top-down and side coupling.

Powerful data acquisition and system control interface with scripting and methods definition capabilities.

Visual confirmation of Raman laser alignment in all modes.

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KnowItAll® HORIBA Edition. Fast chemical identification with HORIBA spectral database (>1750 spectra).

Nano-Spectroscopy Solutions

AFM-Raman, TERS, NSOM

Chemical imaging at the nanoscale

info.sci@horiba.com
www.horiba.com/scientific
Versatile

Numerous SPM modes including AFM, STM, tuning fork, NSOM.

Full range of Raman excitation lasers, including red and NIR, without interferences, thanks to a 1300 nm AFM feedback diode. (1)

Up to 3 spectroscopic detectors and 20 SPM channels.

High resolution sample scanner from nanometers to full scan range. (5)

Top down and oblique Raman detection for optimum resolution and throughput in both co-localized and Tip-Enhanced measurement modes. (2)

Full control through one workstation, or, SPM and spectrometer can be operated independently.

Raman-AFM and TERS

Made Easy!

Since its introduction in the early 80’s, Scanning Probe Microscopy (SPM) has quickly made nanoscale imaging an affordable reality. The technique provides a continuously growing variety of methods to characterize materials, yet label-free chemical sensitivity is a hurdle and challenging.

On the other hand, optical spectroscopy has provided a unique way to determine the structure and chemical composition of molecules for decades and is a powerful complements to nanoscale imaging techniques. The two techniques together make up a versatile tool for the physical and chemical characterization of materials. However, integrating such different instrumentation is challenging. Today, with over a decade of experiences in this exciting field, we have refined the technique to its utmost with uncompromised performance to bring you a tool that is not only extremely powerful and versatile, but is also easy to use and reliable, thus generating outstanding data is virtually effortless.

Raman-AFM

Full range of SPM modes and simultaneous spectroscopy

The Ultimate Tool

For Physical and Chemical Characterization

Reliable Results

Fully automated cantilever alignment insuring reproducible optimization of the AFM parameters from one tip to the next and from one user to another. (1) (5)

Reliable repositioning of the probe on the sample within seconds. (1) (8)

Drift compensated sample scanner with high resonance frequency brings reproducible images over long periods of time thanks to low vibration sensitivity. (5)

Raman laser alignment by piezo-driven closed-loop objective scanner: shortest distance to the focus point for minimum drift. (6)

Visual confirmation of the Raman laser alignment with independent video imaging, SPM detection and Raman mapping. (8)

Data courtesy of Prof. Hiroshi Ujii of K.U. Leuven

Main Applications

- Biological structures
- Graphene
- Carbon nanotubes
- Nanorods
- Polymers
- SERS substrates
- Semiconductors

TERS

Label-free chemical characterization with nanoscale resolution
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2. High-throughput optics and spectrometer.
3. High spectral resolution with the LabRAM HR spectrograph.
4. Broad range of detection wavelengths, from deep UV to infrared.
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KnowItAll®
HORIBA

All samples are available from www.horiba.com/Scientific.

Chemical imaging at the nanoscale.
Since its introduction in the early 80's, Scanning Probe Microscopy (SPM) has quickly made nanoscale imaging an affordable reality. The technique provides a continually growing variety of practically useful physical characterization of materials, yet label-free chemical sensitivity is still challenging.

On the other hand, optical spectroscopy has provided a unique way to determine the structure and chemical composition of molecules at all scales and in a non-destructive fashion. However, optical techniques suffer from diffraction-limited spatial resolution.

The two techniques together make up an attractive and unique tool, yet integrating such different instrumentation is challenging. Today, with over a decade of experience in this exciting field, we at [Company Name] have refined the technique to its utmost with uncompromised performance to bring you a tool that is not only extremely powerful and versatile, but is also easy to use, fast and reliable, thus generating outstanding data is virtually effortless.

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