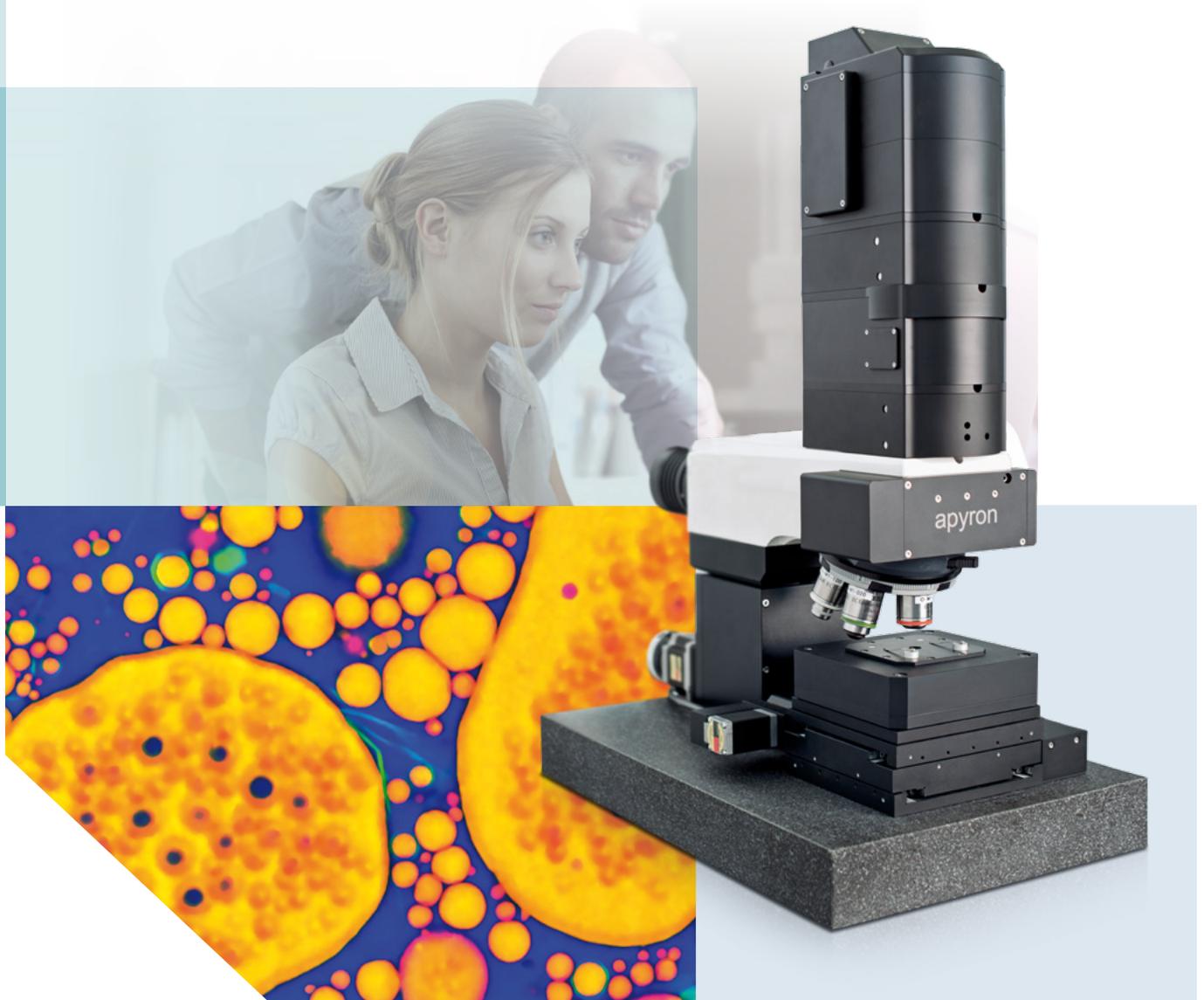


Experience the Premier Solution for
Automated 3D Confocal Raman Imaging

apyron

Class-leading Performance: Automatically



apyron

Class-leading Performance: Automatically

The apyron Raman imaging system will assist you in exploring beyond the established frontiers of your field. It has been developed to overcome the boundaries between ease-of-use and ultimate capability in confocal Raman imaging. Equipped with this seamless versatility, your creativity can be fully expressed.



apyron [ἀπειρον] is derived from the ancient Greek word for infinity

A new era in automated Raman imaging systems

WITec develops and manufactures industry-leading Raman imaging systems. This distinction also extends to automated systems.

Our apyron is a truly confocal Raman imaging system featuring the highest spectral sensitivity, spatial resolution and imaging speed, **simultaneously**.

Apyron's software-controlled and automated operations accelerate the workflow of confocal Raman measurements, time-series acquisitions and 3D as well as large-area imaging.

An extensive set of default and advanced measurement parameters in combination with motorization and a powerful software environment allow the user to optimize results with unprecedented ease.

Key performance features

- **Highly-automated, push-button instrument and measurement control**
- **True confocality, ideally suited to 3D image generation and depth profiling**
- **Lateral resolution limited only by physical law**
- **Spectral resolution down to 0.1 relative wavenumbers/cm per pixel (@633 nm excitation)**
- **FAST RAMAN IMAGING®**
- **Laser class 1**

apyron is the ideal Raman imaging system for:

- Multi-user labs with varying requirements and levels of user experience
- Industry labs with recurring experimental scenarios and an emphasis on time-critical turnover
- Raman newcomers with advanced imaging requirements
- Veteran Raman spectroscopists seeking the next performance benchmark

Ultimate Automation

Laser power adjustment



TruePower: Automated and software-controlled absolute power determination and adjustment in 0.1 mW increments without exposing the sample to the laser

BENEFITS:

- Reproducibility in measurement conditions
- Optimal laser power determination for the preservation of delicate samples

Laser wavelength selection from UV to NIR

Automated adjustment and calibration of spectrometer and microscope components, including filters, gratings and cameras

BENEFITS:

- User-friendly laser selection with a mouse click
- Consistently optimized system performance

Focus stabilization

Automated routine that employs a user selectable reference point to optimize the Raman signal and compensates for thermal and mechanical variations during long-term measurements

BENEFITS:

- Stable focus for sharp Raman images
- Lab environment-independent results



High-resolution spectrometer systems

Choose from among powerful, throughput-optimized imaging spectrometers with a variety of focal lengths

- UHTS 300 for the most effective and ultrafast 3D confocal Raman imaging
- UHTS 400 for excellent spectral and image quality for IR and NIR
- UHTS 600 for unrivaled spectral resolution

BENEFITS:

- **Flexible configuration for virtually any field of application**
- **Suitable for challenging spectroscopic experiments at low light levels**

Operation

EasyLink: Intuitive and tactile direction of hardware and software with a handheld controller

Software wizard: Streamlined guidance through the complete measurement and image processing

BENEFITS:

- **Extremely user-friendly operation of the system**

Data analysis

TrueMatch: Accessible, integrated and thorough database management and generation

BENEFITS:

- **Quick yet comprehensive understanding of samples' features**

System settings

TrueCal: Pre-defined calibration routines for optical and mechanical microscope components

BENEFITS:

- **Reproducible system standards for multi-user laboratories**
- **System calibration for changing measurement requirements made easy**

Throughput maximization

TrueSignal: System-controlled adjustment of signal output coupling

BENEFITS:

- **Maximum Raman signal detection ensured**
- **Detection to lowest signal levels enabled**



Optional Extras

- **TrueSurface** for topographic Raman imaging
- AFM
- Fluorescence measurements
- Combined piezo & motorized multi-stage setup
- The full range of WITec accessories

BENEFITS:

- **Configurable for comprehensive sample analysis**
- **Scalable for potential future applications or requirements**

When simplicity meets performance

As a member of the WITec microscope family, apyrion sets the benchmark for automated Raman imaging systems, with excellent imaging quality outstanding spectral and spatial resolution, ultrafast acquisition times and excellent signal sensitivity in combination with automated system configurations and intuitive measurement procedures.

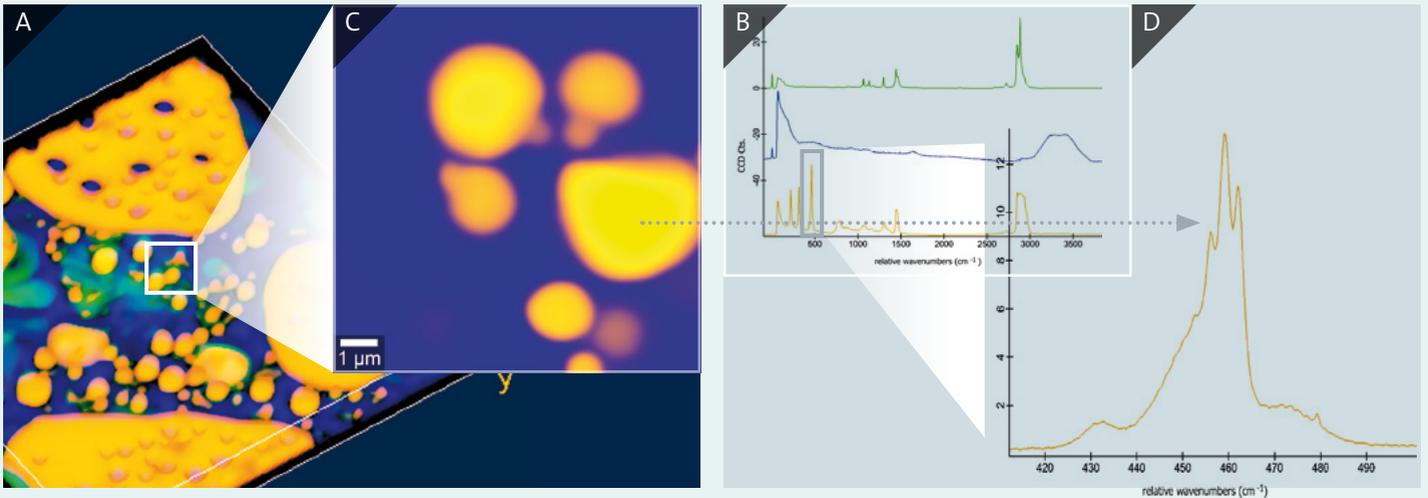
When high-resolution imaging meets high-resolution spectroscopy

Ultra-high-throughput spectrometers provide unprecedented spectral resolution, detailed spectral information at every image pixel and the highest Raman signal sensitivity.

WITec's lens-based imaging spectrometers are specifically designed for Raman microscopy and applications at ultra-low light intensities. Versions are available for a wide variety of excitation wavelengths.

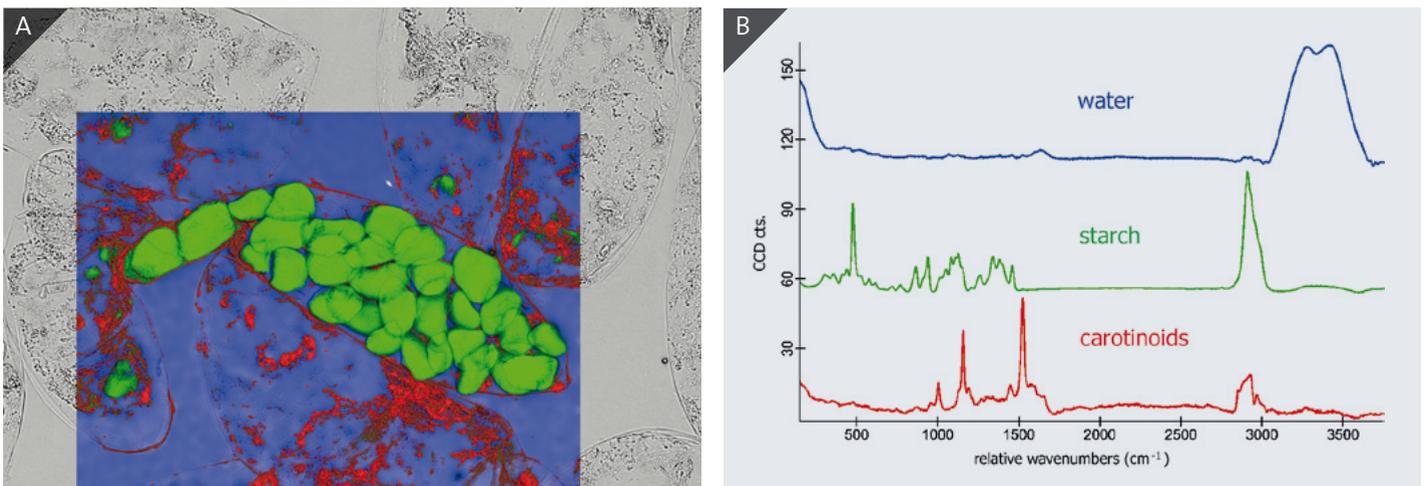
Simultaneously

High spatial and high spectral resolution simultaneously: CCl₄ in an emulsion



(A) 3D confocal Raman image of an emulsion with corresponding Raman spectra shown in **(B)** Green: Alkane; Blue: Water; Yellow: Carbon tetrachloride + Oil. Image parameters: 200 x 200 x 20 pixels, 100 x 100 x 10 μm³ scan range, 0.06 s integration time per spectrum, 532 nm excitation wavelength. **(C)** Zoom-in image with high spectral resolution. Image parameters: 100 x 100 pixels, 10 x 10 μm², 0.08 s integration time per spectrum, UHTS 600 spectrometer, 1800 g/mm grating. **(D)** Due to the high spectral resolution of the spectroscopic system the bands of the CCl₄ peak at 460 cm⁻¹ can be clearly resolved at room temperature.

High resolution correlative, confocal Raman imaging: Banana pulp



(A) For correlative imaging, a Raman image of banana pulp was overlaid onto a white-light image of the same sample. For the Raman measurement at the highest spectral resolution a 600 mm focal length UHTS 600 spectrometer with a 3000 g/mm grating was used. Image parameters: 400 x 300 μm², 1200 x 900 pixels, 2 ms integration time per pixel. **(B)** The Raman spectra of the banana pulp sample revealed its ingredients, mainly water (blue), starch (green) and carotinoids (red).



WE TAKE CARE
WITec uses environmentally friendly printed materials. While this policy is only a small contribution to a healthy environment, we at WITec believe that focusing on details can effect positive change in the world.

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