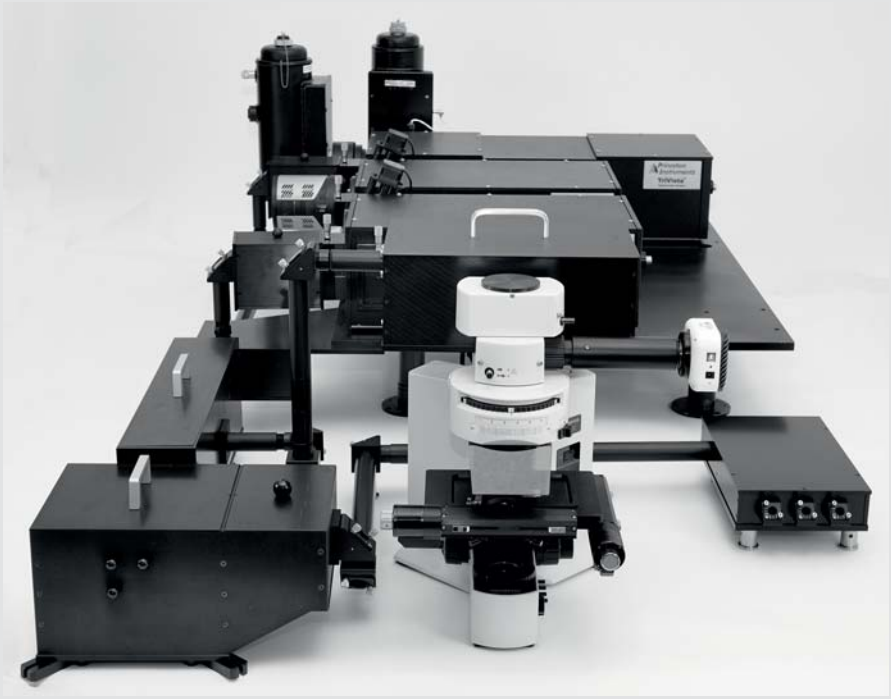
TriVista CRS

Confocal Raman Microscopes



TriVista CRS Benefits

- Deep UV to NIR wavelength range
- Variable bandpass tuneable filter
- Subtractive and additive dispersion
- Bypass to use the last stage only
- Auto Alignment and calibration
- High spectral resolution, i.e. FWHM < 0.1 cm^{-1} @ 633 nm
- Low frequency range down to less than 5 cm^{-1} without additional filters
- High frequency range up to 9.000 cm-1 (@ 532nm), useful for photo luminescence
- Peltier and liquid nitrogen cooled detectors
- Upright, inverted and dual microscopes
- Stepper motor and piezo driven XYZ stages
- Fast Raman Mapping
- Heating/ cooling stages and Helium temperature Cryostats
- Combined Raman and AFM
- Motorized polarization optics

TriVista CRS

Confocal Raman Microscopes

The Raman Microscope Systems from Spectroscopy & Imaging GmbH offer new unmatched flexibility combined with easy handling.

We offer solutions with medium and highest spectral resolution instruments performing best stray light rejection, needed for low-frequency Raman spectroscopy.

The perfect instrument to be used as "working horse" and powerful research tool as well.

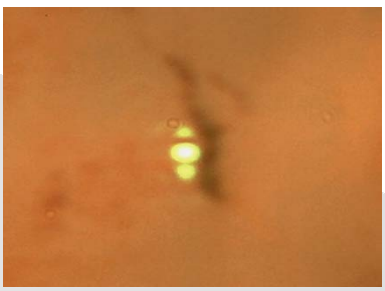
TriVista CRS Raman Microscope systems from S&I are based on the Olympus microscopes BX43, BX53, BX51WI and IX73 for upright and inverted setups.

The confocal Raman microscope offers a spatial resolution in the micron scale.

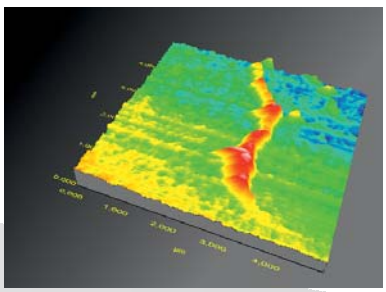
A software driven XYZ stage enables automated 3D mapping.

Microscope Benefits

- Upright Olympus Microscopes BX43, BX53 and BX51WI
- Inverted Olympus Microscope IX73
- Dual Microscope, consist of Upright and Inverted Microscope
- Wide range of UV, VIS and NIR objectives
- Objectives with long working distance
- Motorized XYZ stages with resolution of less than 50 nm
- Piezo XYZ stages with resolution of less than < 1nm
- Heating stages for up to 1500 °C
- Heating and cooling stages for - 196°C to 600°C
- Helium temperature Cryostats
- Combined Raman and AFM with Nanonics and JPK Instruments AFM systems
- Laser safety class I option

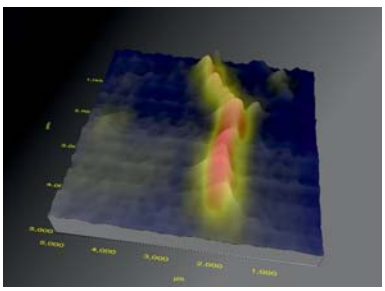


Microscope Image



Carbon Nanotube Sample

AFM Image



AFM plus Raman Image

Spectroscopy & Imaging GmbH
Boerdestr. 1
59581 Warstein
Germany

www.s-and-i.eu
info@s-and-i.de

phone +49-(0)2925-9768666
fax +49-(0)2925-9768675

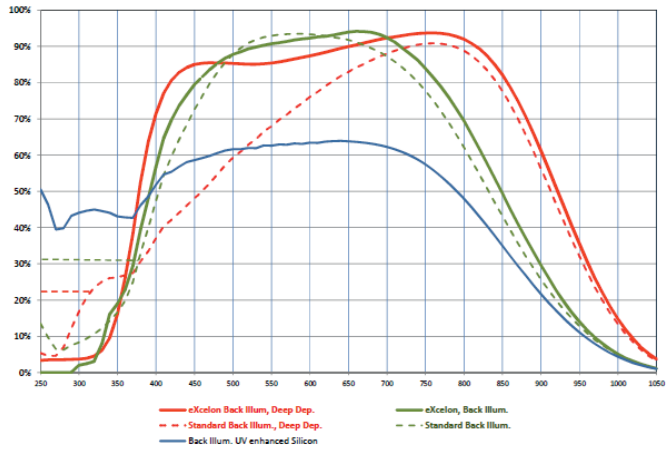
TriVista CRS

Confocal Raman Microscopes

Wide Range of Spectroscopy Detectors

- Peltier and liquid nitrogen cooled detectors
- CCD Detectors with different formats and pixel sizes
- InGaAs Array detectors
- EMCCDs for fastest Raman mapping
- Back Illuminated eXcelon CCD detectors with lowest etaloning
- Photon Counting PMT systems

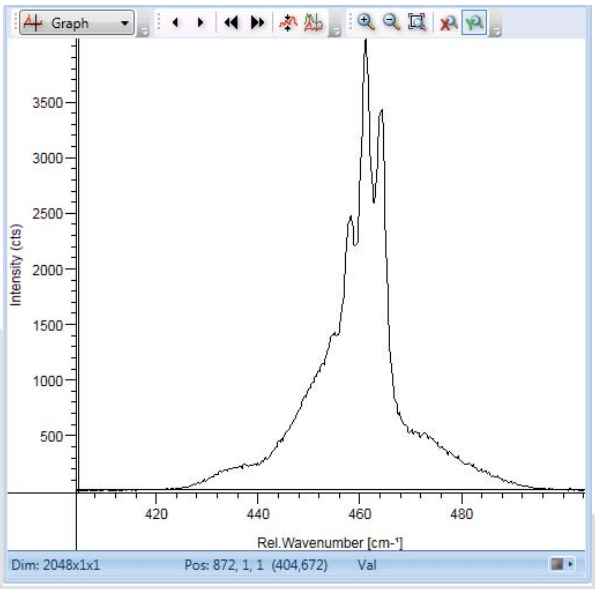
Quantum Efficiency curves of different CCD devices



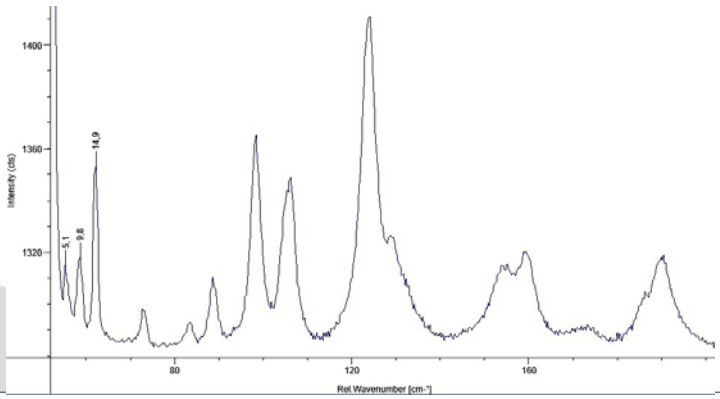
Imaging corrected Spectrographs

- Triple Spectrometer/Spectrographs with different focal lengt
- TR 555 with 3 x 500 mm focal length
- TR 557 with 2 x 500mm plus 750 mm focal length
- TR 777 with 3 x 750 mm focal length
- Additive and Subtractive Dispersion
- Image corrected optics provide superior imaging quality for multi-track applications
- Multiplel entrance and exit ports
- Interchangeable Grating Turrets with 3 gratings per turret
- Motorized entrance and exit Slits with 0 to 3 mm width
- Optional Silver or gold coated mirrors
- Choice of more than 100 gratings available for the best spectral range, throughput and dispersion

Spectral Resolution, shown on CCL4



Low frequency L-Cystine spectrum



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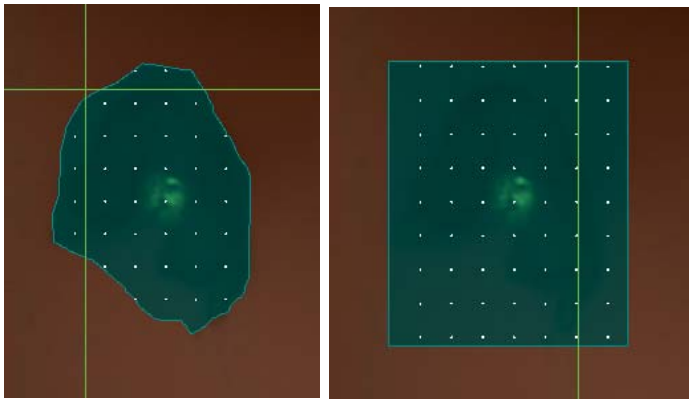
Confocal Raman Microscopes

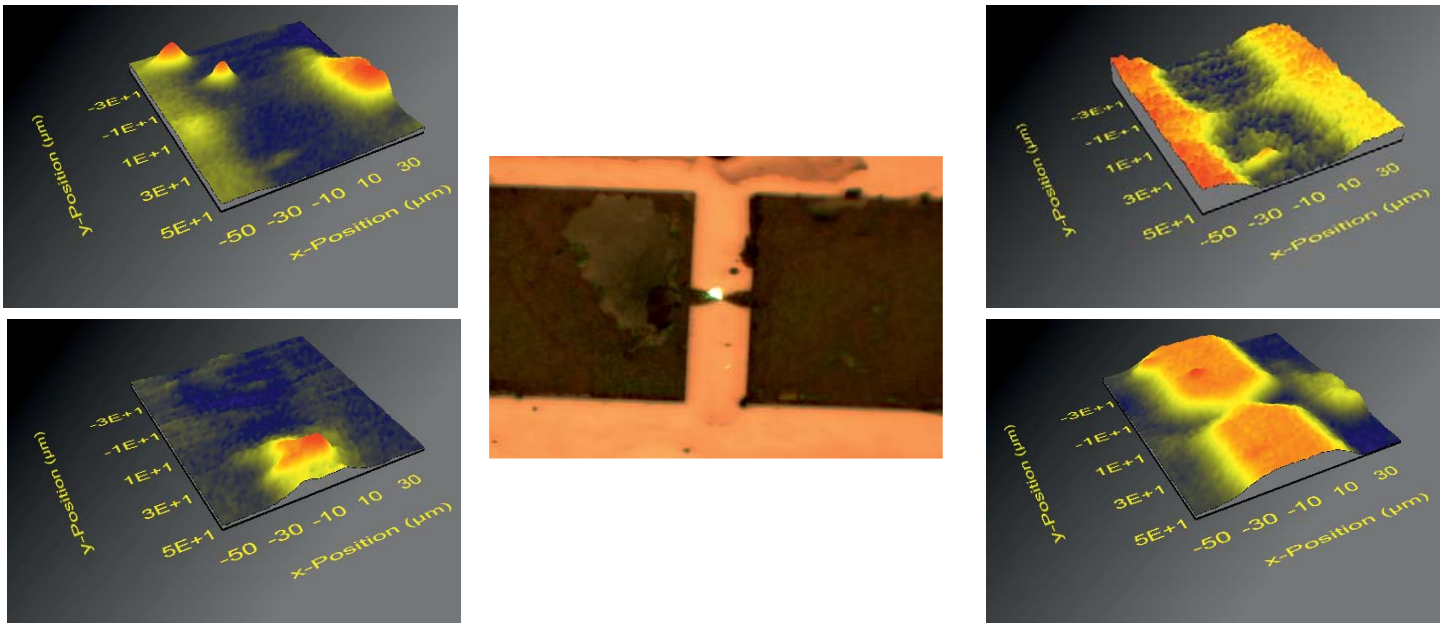
Mapping features like:

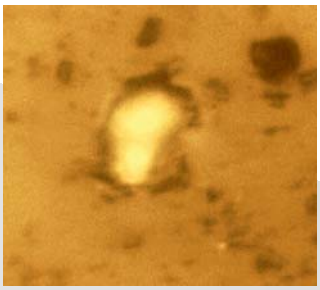
- Line mapping in X, Y and Z
- XY mapping with autofocus
- XYZ mapping
- Point by point mapping
- Fast mapping
- Fast mapping with line focus
- Rectangular and free hand mapping area selections
- Enhanced mapping analysis and display routines

Mapping Area Selection

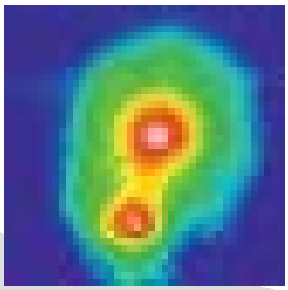


3D Raman Images from different Components on one Sample



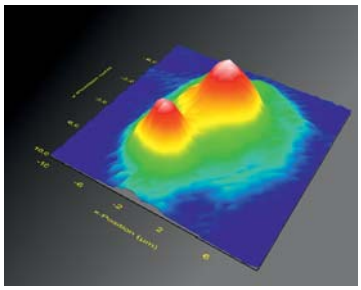


Microscope Image



Images from an Enclosure

2D Raman Image



3D Raman Image

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59581 Warstein
Germany

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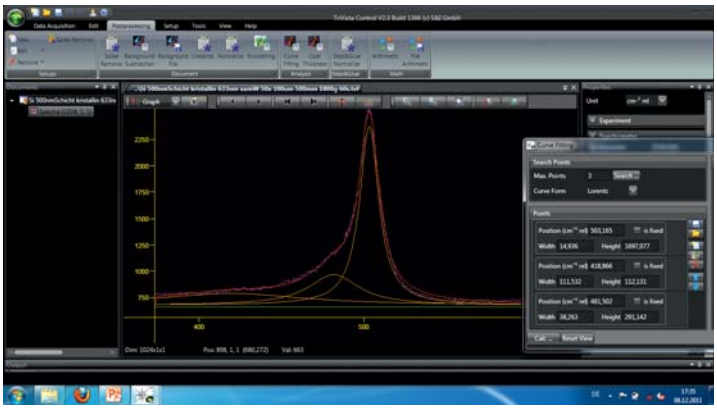
Confocal Raman Microscopes

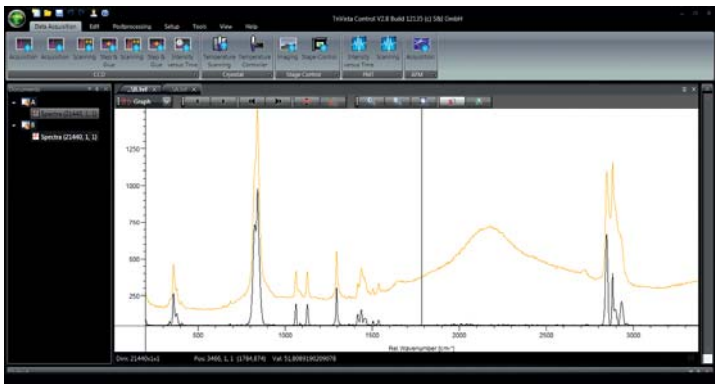
Software Features

- Auto alignment for laser input and Raman signal
- Wavelength and intensity calibration
- Offset correction for objective focus points
- Temperature control for heating-, cooling stages and cryostats
- Raman mapping with auto focus
- Step by step and fast Raman mapping
- Various Postprocessing routines
- Fluorescence and background suppression
- Spectra library module
- C# scripting possibility
- Various data import and export formats
- AFM control

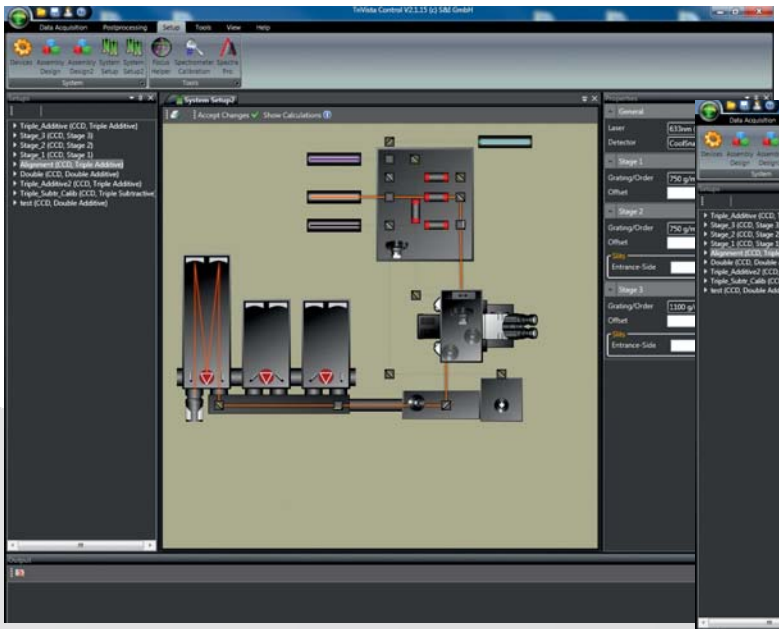
Curve Fit and Deconvolution

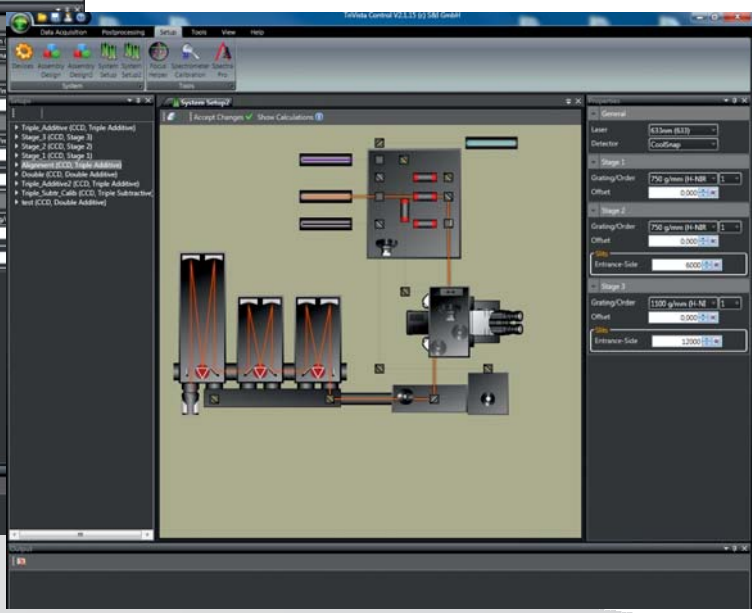


Fluorescence and Background rejection



Hardware Setups and Laser Selection





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