

Customized Confocal Raman Microscopy Lines

Main Features:

1. 320 mm Focal Length Imaging Spectrometer

1. Focal length: 320 mm, F-number: F/4.1
2. Manual slit, adjustable from 0.01–3 mm
3. Single input slit, single output CCD interface
4. Grating options: 1800 g/mm, 600 g/mm, 150 g/mm (blazed at 500 nm)

2. 532 nm Integrated Confocal Raman Probe Box

1. Built-in solid-state laser, 532 nm, 30–100 mW, <3 MHz bandwidth, adjustable power, equipped with OD3 three-level neutral density filters
2. Spectral bandwidth: less than 1.5 nm, long-term stability: less than 2%
3. -60°C deep-cooled spectral CCD camera, near-infrared enhanced
4. 2000 x 255 pixels, 15 x 15 μm pixel size, 30 x 3.8 mm chip size

3. High-Magnification Transmission Microscope

1. Transmission light
2. Long working distance objectives: 10x, 20x, 50x

4. Temperature and Pressure control

1. Temperature range: -195 to 500°C with accuracy: 0.01°C
2. Pressure: 100 MPa (up to 150 MPa)



Full Visual Microtubule Raman Microprobe Under HT-HP Control

Instrument Components:

1. 320 mm Focal Length Imaging Spectrometer
2. Confocal Raman Box with 532 nm Wavelength
3. High-Magnification Transmission Microscope
4. Visible Microtube and Microtube Movement Platform
5. Temperature and Pressure Equipment

Customized Confocal Raman Microscopy Lines

Main Applications:

1. **CCS:** Diffusion and Dissolution of CO_2 in Brine; Interaction CO_2 /Water/Rocks
2. **CCUS:** Interaction between Oil and CO_2 ; Oil expansion
3. **Deep sea:** Environmental geology
4. **Environment:** Waste/Treatment
5. **Chemical Engineering:** Chemical reaction
6. **Pyrolysis:** Thermal stability of a substance
7. **More applications:** Underdevelopment



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Temperature and Pressure Control Devices

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2. 532 nm Integrated Confocal Raman Probe Box

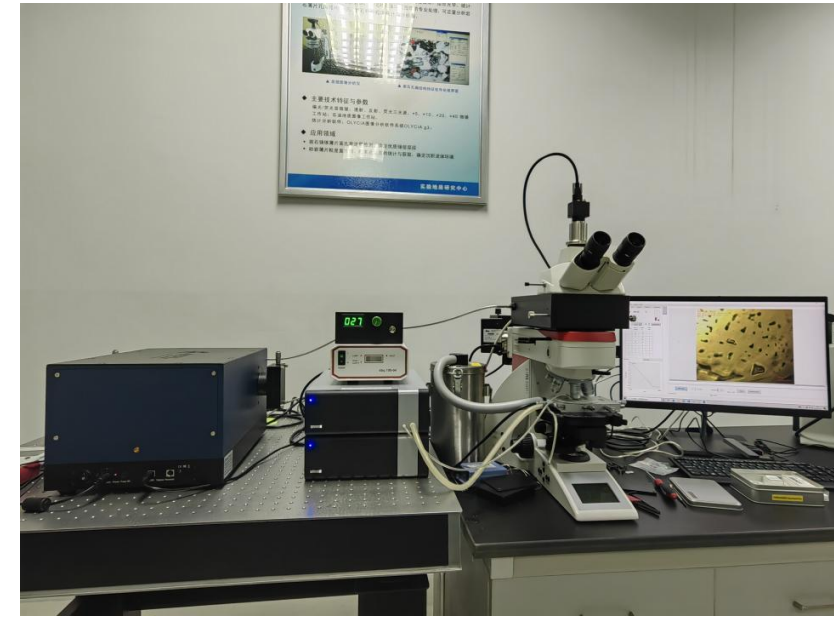
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2. Spectral bandwidth: less than 1.5 nm, long-term stability: less than 2%
3. -60°C deep-cooled spectral CCD camera, near-infrared enhanced
4. 2000 x 255 pixels, 15 x 15 μm pixel size, 30 x 3.8 mm chip size

3. High-Magnification Transmission Microscope

1. Transmission and reflected light with UV/NIR/Visual light
2. Long working distance objectives: 10x, 20x, 50x

4. Temperature control

1. Temperature range: -195 to 600°C with accuracy: 0.01°C
2. Temperature range: up to 1700°C with accuracy: 1°C



Fluid Inclusion thermometry
microprobe

Instrument Components:

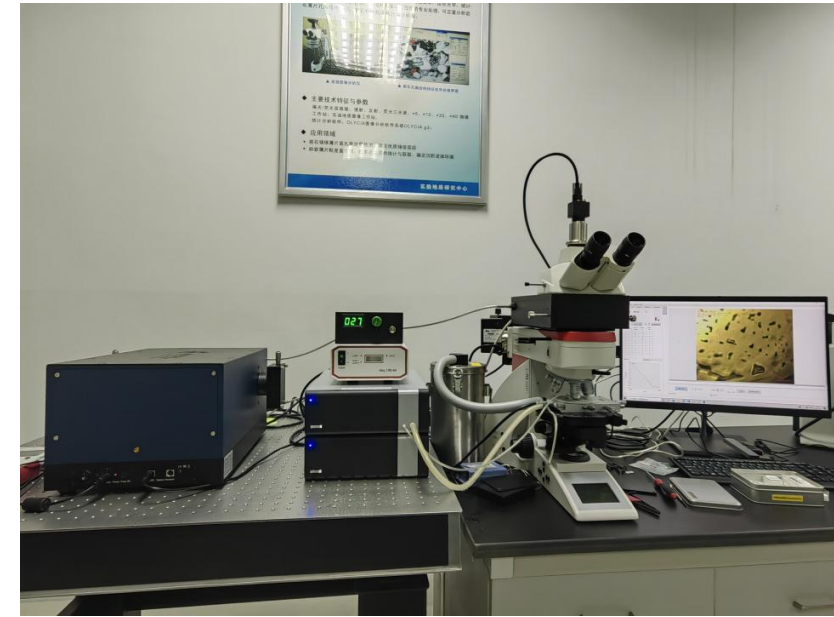
1. 320 mm Focal Length Imaging Spectrometer
2. Confocal Raman Box with 532 nm Wavelength
3. High-Magnification Transmission and Reflected Light Microscope
4. Temperature control stages

Customized Confocal Raman Microscopy Lines

Fluid inclusions are tiny pockets of fluid trapped within minerals, offering valuable information about the fluid composition, temperature, pressure, and conditions at the time the host mineral formed. They are commonly studied in geology, mineralogy, and petrology.

Main Applications:

1. **Petroleum Reservoirs:** Timing, temperature, and pressure of hydrocarbon charging
2. **Mineral resources:** The temperature and mechanism of mineral deposit formation
3. **Gemstone:** Gemstone identification; Determining origin; Studying formation conditions; Detecting gemstone treatments



Fluid Inclusion thermometry microprobe



Heating stages

Customized Confocal Raman Microscopy Lines

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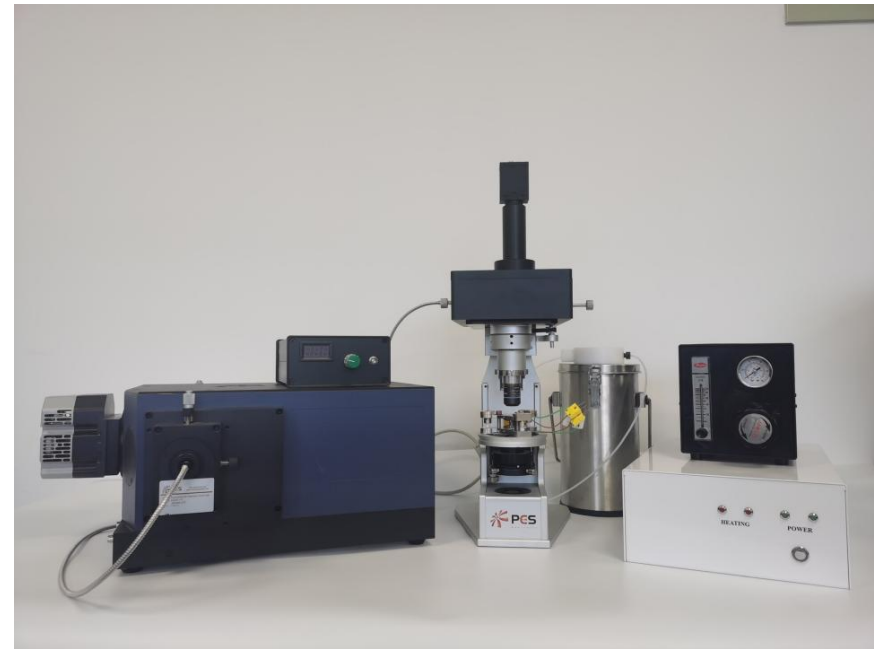
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3. High-Magnification Transmission Microscope

1. Transmission light
2. Long working distance objectives: 10x, 20x, 50x

4. HDAC stage



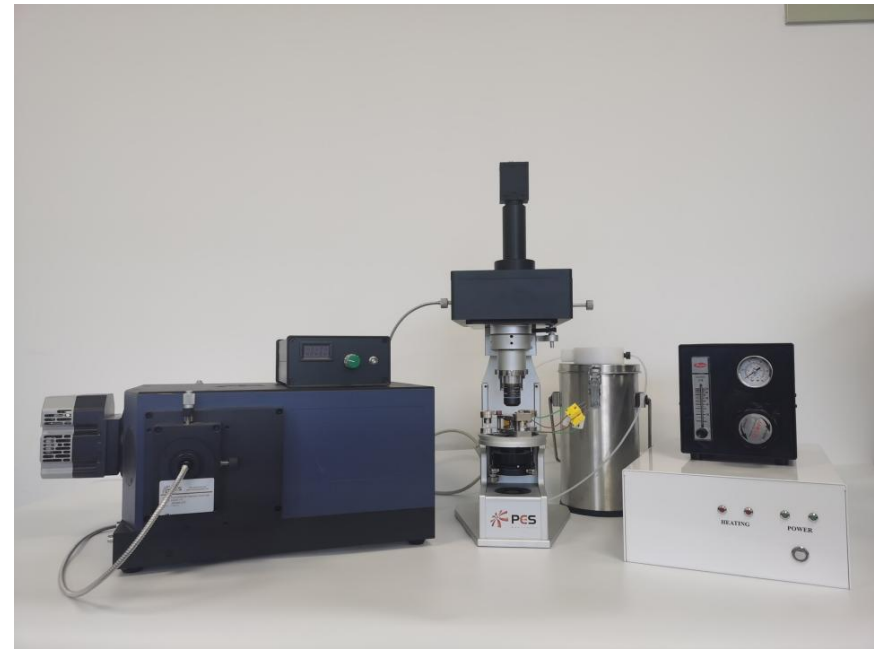
HDAC Raman microprobe

Instrument Components:

1. 320 mm Focal Length Imaging Spectrometer
2. Confocal Raman Box with 532 nm Wavelength
3. High-Magnification Transmission and Reflected Light Microscope
4. Hydrothermal Diamond Anvil Cell (HDAC)

Customized Confocal Raman Microscopy Lines

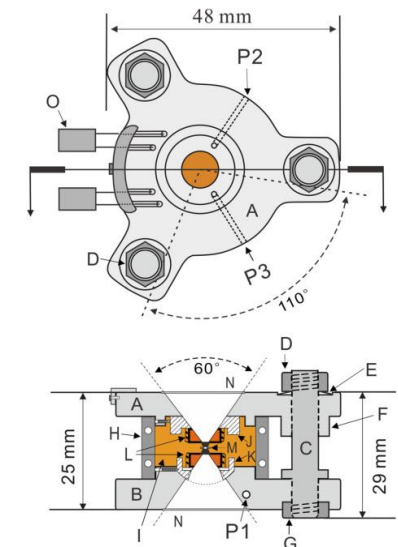
A Hydrothermal Diamond Anvil Cell (HDAC) is a high-pressure, high-temperature device used to simulate the conditions deep within the Earth's crust and mantle, particularly for studying fluid-rock interactions, mineral transformations, and geochemical processes under hydrothermal conditions. It combines the use of diamond anvils, which can withstand extremely high pressures, with a design that allows for heating and observation of fluid phases at temperatures and pressures that resemble natural hydrothermal systems.



HDAC Raman microprobe



HDAC stages



Customized Confocal Raman Microscopy Lines



**Inverted Heating Confocal Raman Microscopy
For Live cell, Biophysics and DNA**

More Standard OEM Research Raman Products available



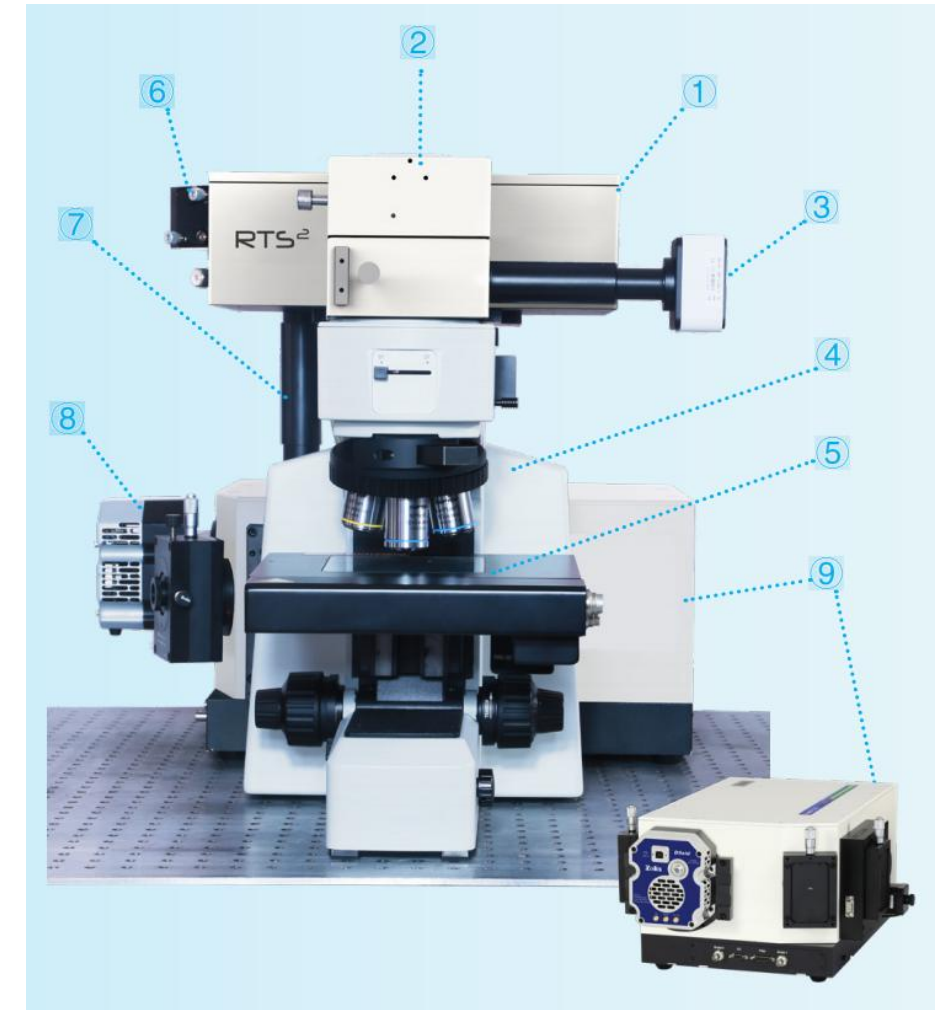
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Raman Spectroscopy



RTS2 Multifunctional Laser Confocal
Microscopic Raman Spectrometer

RTS2 Multifunctional Laser Confocal Microscopic Raman Spectrometer

- ① **Raman Interface Box:** Built-in commonly used lasers and filter sets, with extended lasers supporting free-space and single-mode fiber input.
- ② **Optical Path Steering Control:** The optical path can be directed downwards or to the left, allowing compatibility with peripherals like AFM, cryostats, and probe stations, and is upgradeable to a galvanometer scanning option.
- ③ **Bright Field Camera:** Replaces the eyepiece with a bright field camera.
- ④ **Raman Microscope:** Upright research-grade metallurgical microscope, standard configuration includes epi-illumination for bright and dark field; other illumination modes are upgradeable.
- ⑤ **Motorized Sample Stage:** High-precision motorized stage with 75x50 mm travel and 1 μm positioning accuracy.
- ⑥ **Fiber Confocal or Pinhole Confocal Mode:** Improves Z-axis confocal resolution, with Z resolution $<1.5 \mu\text{m}$ at a 10 μm pinhole.
- ⑦ **CCD-Slit Confocal Coupling:** Standard free-space CCD-slit coupling, allowing for spectrometer imaging mode with high light throughput.
- ⑧ **Spectral CCD:** Back-illuminated, deep-depletion spectral CCD camera, covering a 200–1100 nm wavelength range, with peak QE $>90\%$.
- ⑨ **320 mm Spectrometer:** F/4.2 high-throughput correction spectrometer with a stray light suppression ratio of 1×10^{-5} .



RTS2 Multifunctional Laser Confocal Microscopic Raman Spectrometer

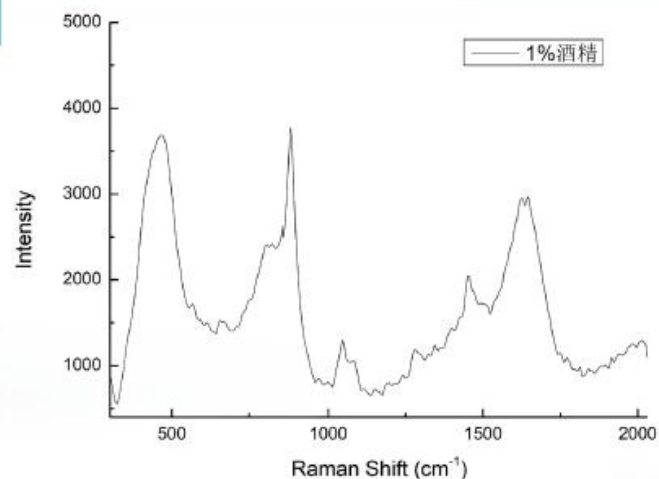
Main features :

- Built-in commonly used lasers at 532, 638, and 785 nm; fixed laser path eliminates the need for switching or adjustments.
- Expandable to a fourth single-mode fiber laser or free-space coupling, compatible with various types of lasers.
- Optional fiber confocal, spatial confocal, and pinhole confocal modes for balancing microscopic imaging with high-confocal experiments.
- Research-grade upright microscope without modification, ensuring the original microscope functions remain unaffected.
- Configurable with an automatic focusing module to keep the sample continuously in focus.
- Standard configuration includes a 320 mm focal length imaging-corrected high-throughput spectrometer and high-pixel deep-cooled spectroscopic CCD camera.
- Expandable to include detectors such as EMCCD, ICCD, and InGaAs array to enhance system functionality.
- Utilizes ultra-high precision motorized stage with 1 μm positioning accuracy, and is upgradeable for Raman mapping functionality.
- Offers a variety of integration solutions with open-loop, closed-loop, and high/low temperature sample stages.
- Direct integration with hyperspectral systems for micro-area transmission/reflection absorption, dark-field scattering spectra, and wide-field fluorescence spectra acquisition.

Finder Edge1064nm

--Handheld Raman Spectrometer

Accurate Identification of 1% Alcohol Content



The 1064 nm Handheld Raman Spectrometer is a new addition to the Finder Edge series from PES Enterprise Australia Pty Ltd. It is designed for qualitative identification of various forms of inorganic and organic substances. Equipped with a cooled detector, the device offers high detection efficiency. Compared to handheld Raman spectrometers in the visible light range, the 1064 nm wavelength provides the distinct advantage of effectively avoiding fluorescence interference.