

Auto-Focusing & Mapping Raman Microscope

ATR8500

Features:

- Fully automated Raman imaging, auto-focus, auto-scan;
- Large area imaging (50X50mm), Automated imaging spicing technology;
- Maximum three wavelengths lasers;
- Depth of Field (DOF) camera optional
- High sensitivity, SNR>6000:1
- Integration time no less than 1.3 hours
- True-Focus to ensure accurate Raman image
- High spatial resolution
- Exclusive software function to switch optical path
- Fast positioning focus
- High quality objectives, spot size up to μm level
- 5-mega camera for clear image
- USB2.0 direct connect to PC

Application:

- Nano particles & new materials
- Scientific research institute
- Biological Science
- Forensic medical identification
- Materials science
- Medical Immunology Analysis
- Agricultural & food safety
- Water pollution analysis
- Gemstones and inorganic minerals identification
- Environmental Science

Description:

ATR8500 series Raman microscope integrates maximum three lasers into the system, combine double advantages of Raman spectrometer and microscope, and make “eyes see is to be detected” come true. Visualize precision positioning on Raman microscope stage in where sample position, ensure the observer to detect Raman signal collected from different sample surface, and to be displayed micro area of different sample surface on the computer. It can facilitate micro area to be detected by Raman microscope.

ATR8500 series is auto-focus, auto-scan, one button operate, batch measurement, uniformed scan and reliable Raman mapping data can be obtained fast and waste no time.

ATR8500 with exclusive objectives for Raman system, it makes laser spot size close to diffraction limits, then with 5-mega camera to projected on the computer accurate position visualized, generated good Raman spectra data.

ATR8500 reduce optical path signal loss to minimum during camera imaging, and result in perfect Raman signal intensity, It's a perfect solution to separate Raman imaging and Raman signal collecting.

ATR8500 combines high performance Raman system of high sensitivity, SNR excel in the Raman analysis research industry.



ATR8500 Order Guide:

ATR8500 Series Models Selection		
Selection	Model	Description
Mapping Mode	ATR8500-BS	Manual focus
	ATR8500-AF	Auto focus
	ATR8500-MP	Auto-focus & Mapping
Detector	ATR8500-XX-LT	Deep cooled to -30°C, ultra-long integration time (up to 1.3h)
	ATR8500-XX-FI	Peak Quantum Efficiency:50%@730nm Deep-Cooled to -40°C Deep-Cooled to -70°C
	ATR8500-XX-BI	Peak Quantum Efficiency:95%@800nm Deep-Cooled to -40°C Deep-Cooled to -70°C
	ATR8500-XX-SCM	cooled SCMOS detector
Focus Length/nm	ATR8500-XX-XX-FL210	Focal length 210mm
	ATR8500-XX-XX-FL350	Focal length 350mm
	ATR8500-XX-XX-FL510	Focal length 510mm
	ATR880-XX-XX0-FL810	Focal length 810mm
Wavelength/nm	ATR8500-XX-XX-XX-266	Single Wavelength 266nm
	ATR8500-XX-XX-XX-325	Single Wavelength 325nm
	ATR8500-XX-XX-XX-405	Single Wavelength 405nm
	ATR8500-XX-XX-XX-532	Single Wavelength 532nm
	ATR8500-XX-XX-XX-633/638	Single Wavelength 633/638nm
	ATR8500-785	Single Wavelength 785nm
	ATR8500-XX-XX-XX-1064	Single Wavelength 1064nm
	ATR8500-XX-XX-XX-wavelength 1+ wavelength 2	any two wavelengths of 266nm,325nm, 405nm, 532nm, 633nm, 638nm, 785nm, 1064nm
	ATR8500-XX-XX-XX-wavelength 1+ wavelength 2+wavelength3	any three wavelengths of 266nm,325nm, 405nm, 532nm, 633nm, 638nm, 785nm, 1064nm
	ATR8500-XX-XX-XX-wavelength 1+ wavelength 2+wavelength 3+wavelength 4	any four wavelengths of 266nm,325nm, 405nm, 532nm, 633nm, 638nm, 785nm, 1064nm
ATR8500 series can be customized, and select specific Mapping Mode, Detector model, Focus Length, and WaveLengths as above e.g.: ATR8500-AF-LT-FL350-532+633: Autofocus, long integration time, focal length of 350mm, dual wavelengths: 532nm and 633nm		

ATR8500 Performance parameters	
Microscope Camera System	5-mega pixels
Focus Type	Conjugate Focus
Laser spot size	>1μm
Laser stability	$\sigma/\mu < \pm 0.2\%$
Interface	USB2.0
X,Y-axis Electronic controlled two-dimension platform	
Move range	50 X 50 mm
Move resolution	0.1 μm

Positioning Accuracy	1 μm
Scan Speed	20 mm/s
Z-axis (Auto-Focus)	
Focus Accuracy	$\leq \pm 0.2 \mu\text{m}$
Max range	20 mm
Focus speed	Less than 10 s



Fig 1 ATR8500 Raman Microscope outlook

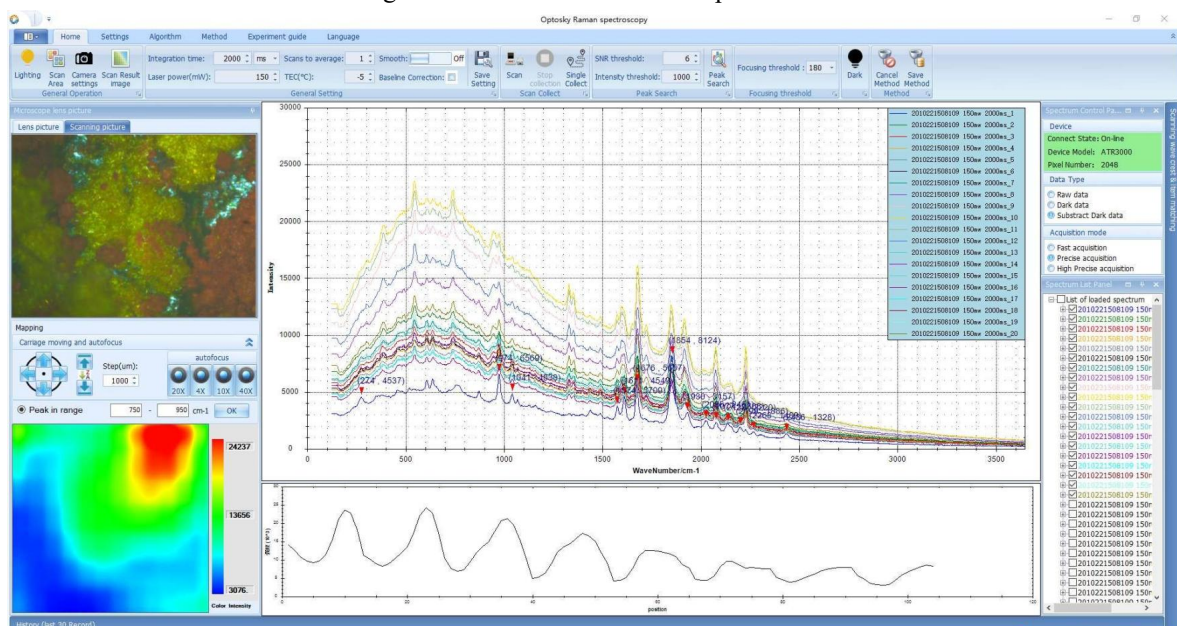


Fig 2 ATR8500 software interface in English

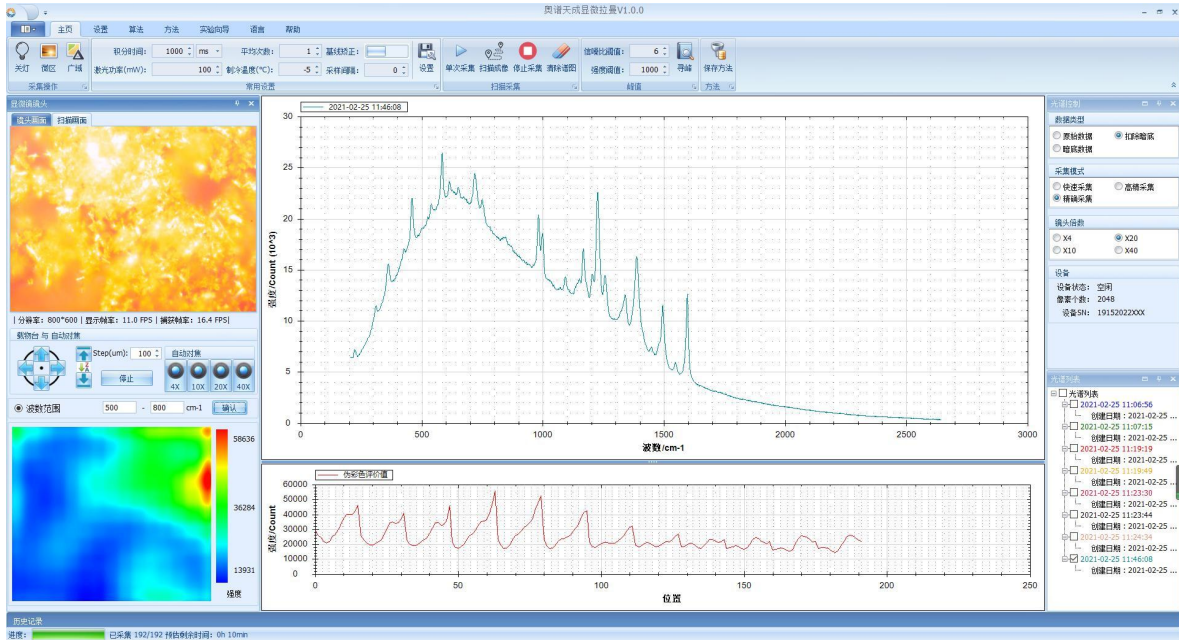


Fig 3 ATR8500 software interface in Chinese

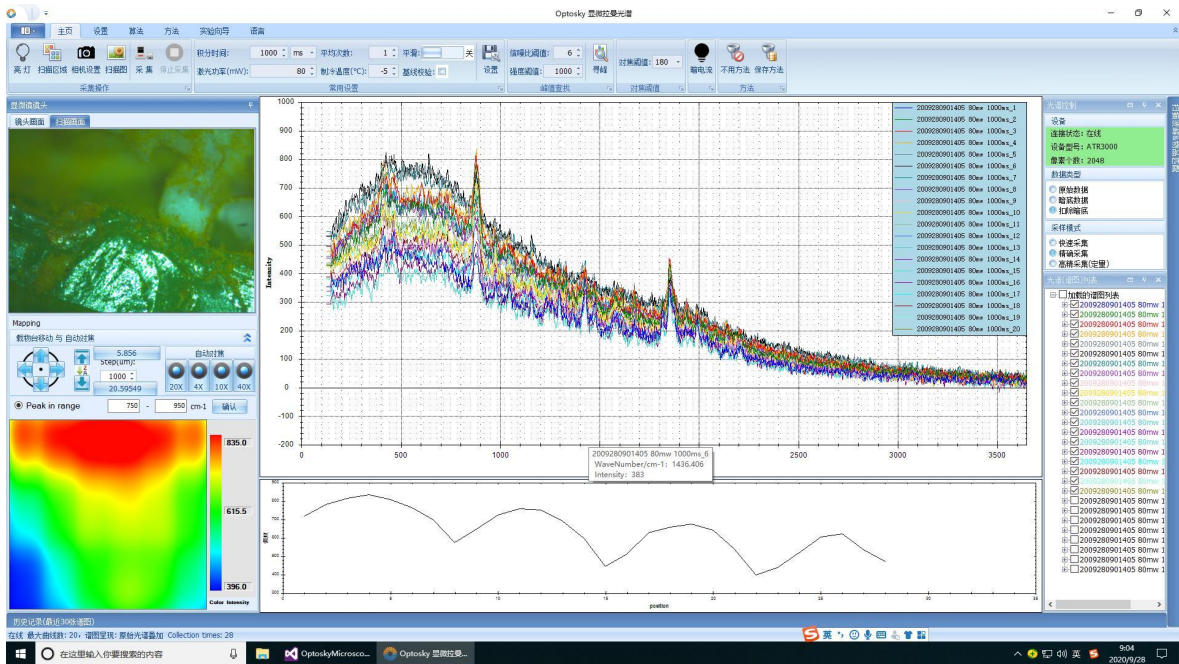


Fig 4 ATR8500 software interface 2 (integration time 1000ms setup fast scan)

2 Optical Performance

2.1 Spectrum

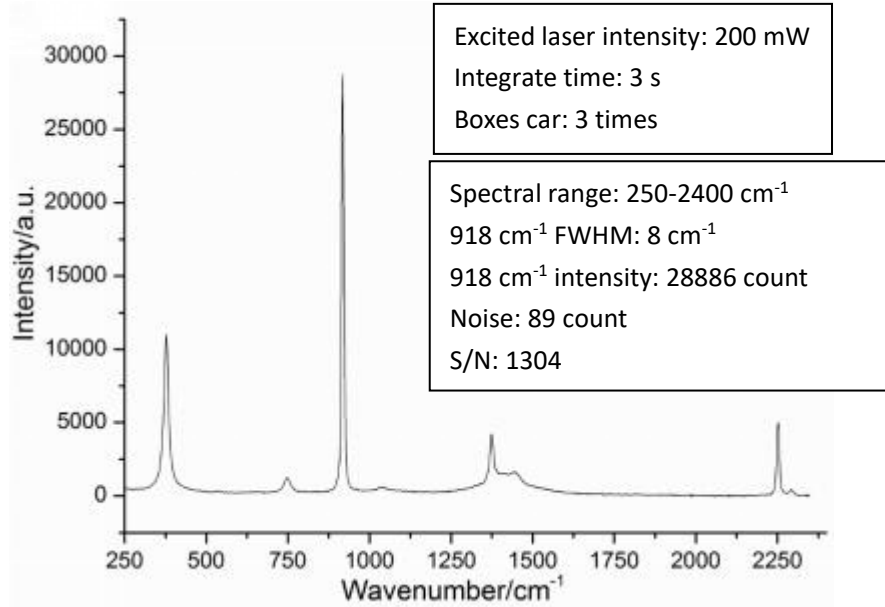


Fig 5 ATR8500 acquire Acetonitrile spectrum

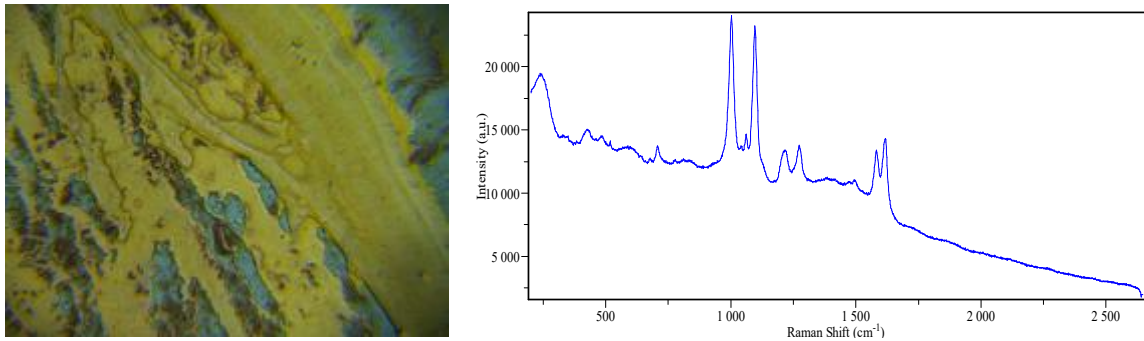


Fig 6 ATR8500 perform SERS 1 (The Left is sample image, the right is SERS Raman spectra)

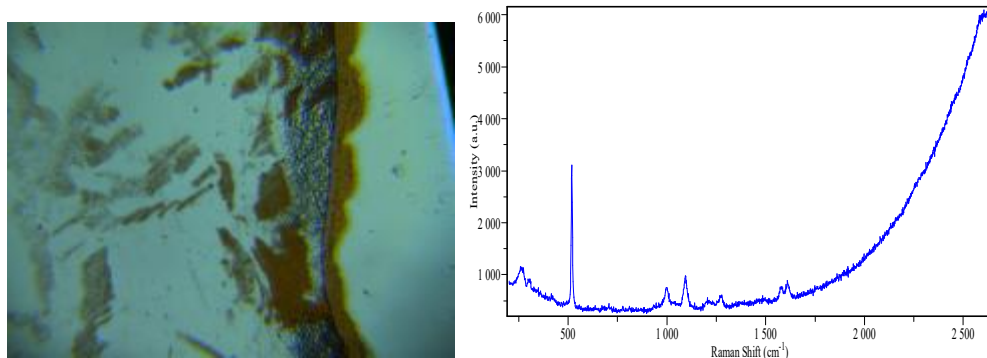


Fig 7 ATR8500 perform SERS test 2 (The Left is sample picture, the right is SERS Raman spectra)

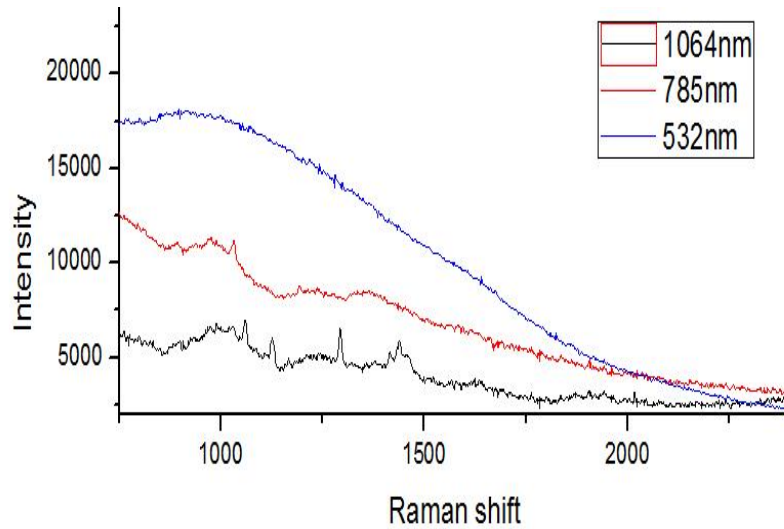
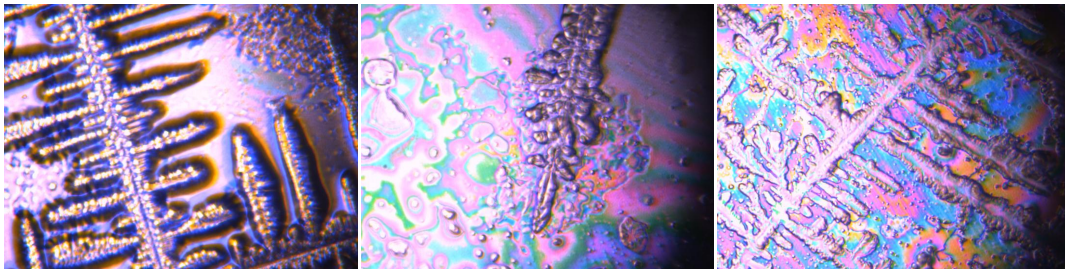


Fig 8 ATR8500 Test cell metabolite, the above surface topography, the below is Raman spectra separately by ATR8500-1064, ATR8500-785, ATR8500-532

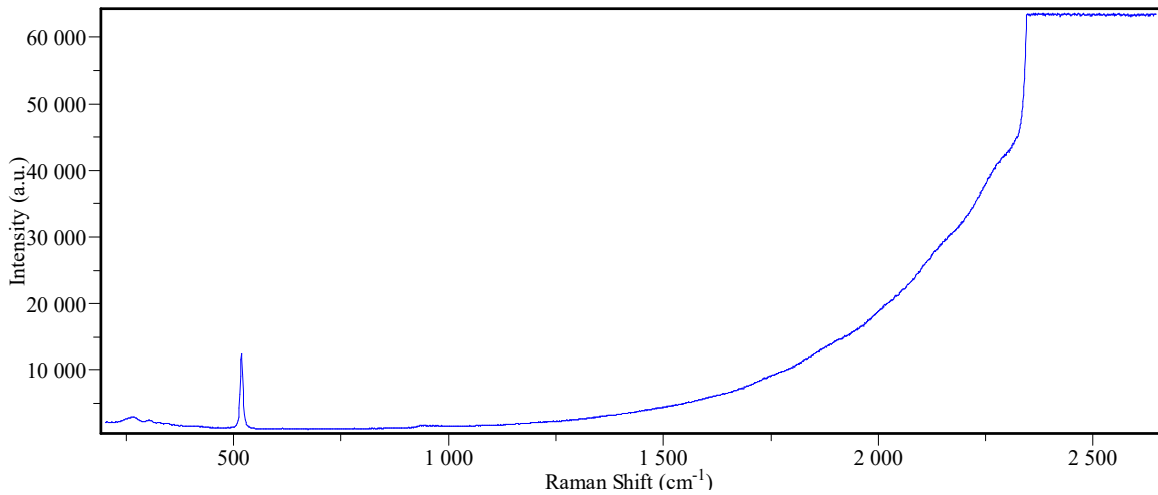


Fig 9 ATR8500 test Si Raman Spectra (500mW, 1S Integration time)

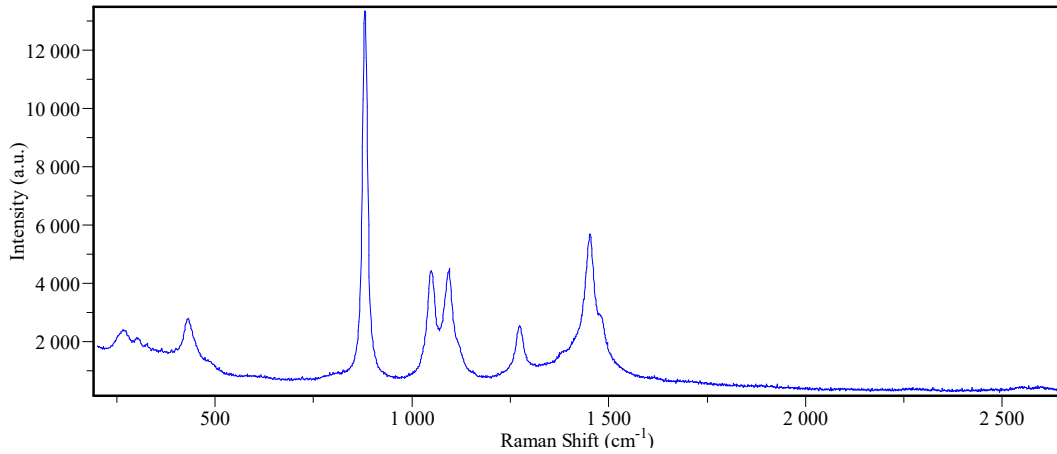


Fig 10 ATR8500 measure ethanol spectra (500mW, 1S integration time)

5. Details



Fig 11 Raman signal high through put objectives with focal length up to 8mm;

6. Reference List

