

Raman Microscope Dual-Band & Auto-Focus DTR8300TW

Features

Dual-Band Wavelength

>785+1064nm;

>532+1064nm;

>532+633 nm;

>532nm+785 nm;

>633+1064nm;

Auto-Focus, Auto Scan, All-Auto Raman Experiment;

Ultra-high Sensitivity, SNR>6000:1

True Confocal, ensure precision Raman image

Ultra-high space resolution

Unique Software Control switch optical path

Ultra-high stability

Good quality optical component, excellent product performance;

Quick positioning, swift to find focal position

High Quality Objective, Light spot in micrometer level

5-mega pixels camera, clear and accurate image

USB2.0 interface connecting PC

Application

Nano particles and new materials

Scientific research Institutions

Bioscience

Forensic identification

Material science

Medical immunology analysis

Agriculture and food accreditation

Gemstones & minerals identification



Description

DTR8300TW Series integrate two lasers, microscope and Raman spectrometer, combining with all of advantages to one miniature Raman microscope instrument. It becomes possible to see micro areas of samples on the computer screen with just a single mouse click. When the sample is visualized in accurate position, the observer scan Raman spectrum under various surface conditions, and synchronous Mapping can be displayed intuitively on the screen in a click. As a result, it takes great convenience to detect micro areas of samples.

Combine unique patented conjugate focusing(true confocal) system with accurate image processing algorithm, and it enables a very small sample areas to be analyzed, as well as it requires minimal operator training and maintenance, yet resulting in uniform result not just spectrum.

DTR8300TW Series operate in all-auto focus, all-auto scan, one-button operate, it can run batches of experiment, uniform scan, wait for no time can obtain highly reliable scanned imaging Raman data;

DTR8300TW is equipped with tailor-made objective, and laser spot on the sample becomes very close to diffraction limit, then focal information can be displayed in accurate and intuitive on the screen with 5-megapixel camera. it improves Raman spectrum quality, as a result of overcoming the problem due to traditional Raman system collects Raman signal from higher or lower actual focal surface.

DTR8300TW solve signal loss in optical path while camera imaging, it also separate camera imaging from Raman signal collection in order to obtain optimal signal intensity.

Meanwhile, DTR8300TW installed the high performance Raman spectrometer, which employs sensitivity, SNR, stability leading the industry level, in return provide guarantee for Raman analysis.



Parameters

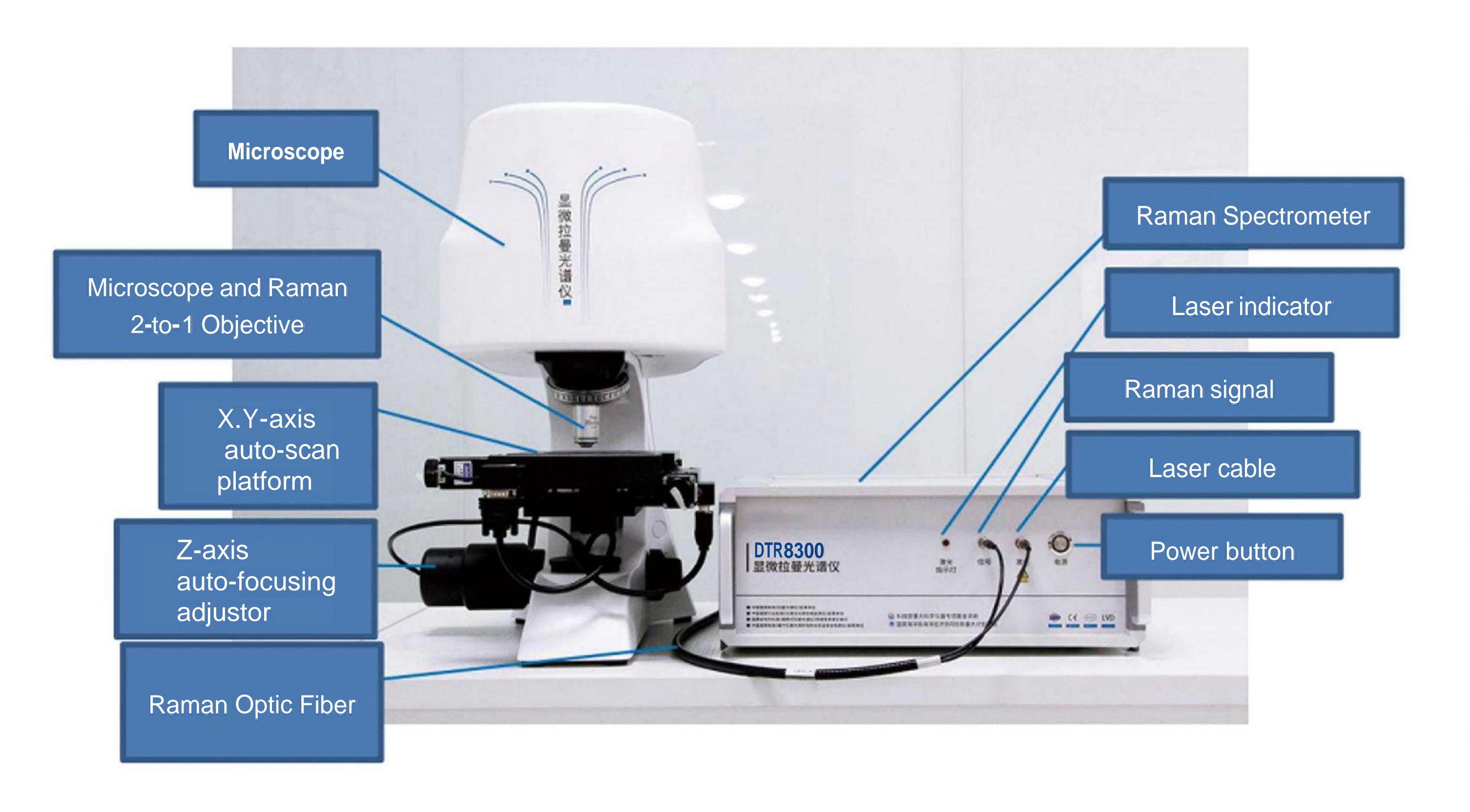
DTR8300TW Performance Paramete	ers
Camera	5-mega industrial camera
Focus	True Confocal
Laser Spot Diameter	>1pm
Laser Stability	$o/p < \pm 0.2\%$
Interface	USB2.0
Electrical controlled X,Y axis 2D pla	tform
Moving range	5 X 5 cm
Moving resolution	0.1pm
Positioning accuracy	1pm
Scan speed	20mm/s
Zaxis (automated focusing)	
Focusing accuracy	≤±0.2pm
Max. range	20mm
Focusing speed	Less than 10 s

Sheet 2 DTR8300TW Performance Parameters

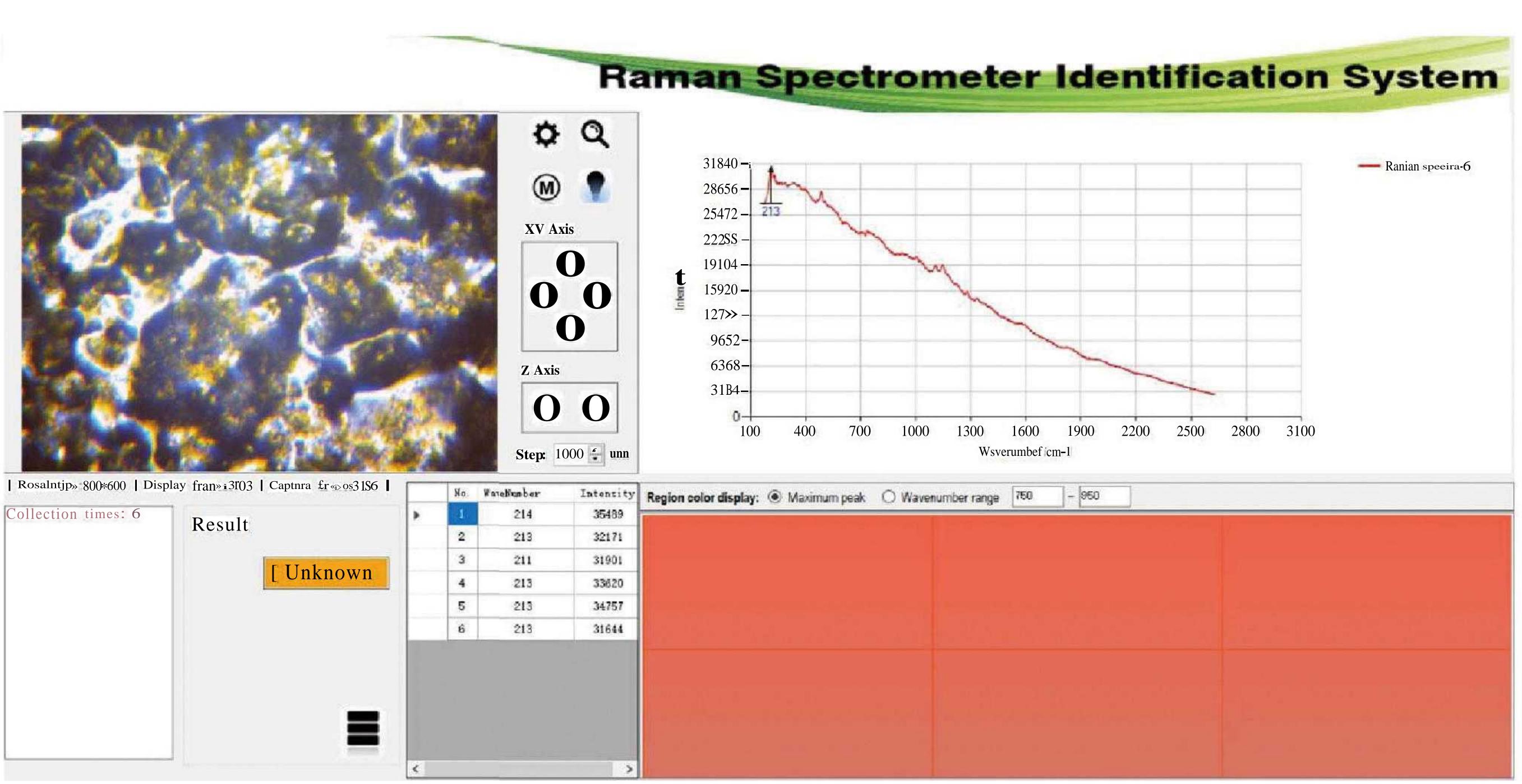
Models	Excitation Wavelength
DTR8300TW-785+1064	785+1064 nm
DTR8300TW-532+633	532+633 nm
DTR8300TW-532+1064	532+1064 nm
DTR8300TW-532+785	532nm+785 nm
DTR8300TW-633+1064	633+1064 nm

Customized Wavelengths

Wavelength 1	Wavelength 2/nm	Power/mW	Wavenumber Range/cm-1	Resolution/cm-1
532 nm	532	100	200 – 3700	5 - 7
633 nm	633	50	200 ~ 3500	3 – 6
785nm	785	500	$250 - 2700_{\rm s}$ $200 - 3500_{\rm s}$ $200 - 4300$	$3 \sim 6_{\rm s}$ $4 - 8_{\rm s}$ $5 \sim 10$
1064 nm	1064	500	200 - 2600	7-12







Software interface of DTR8300TW



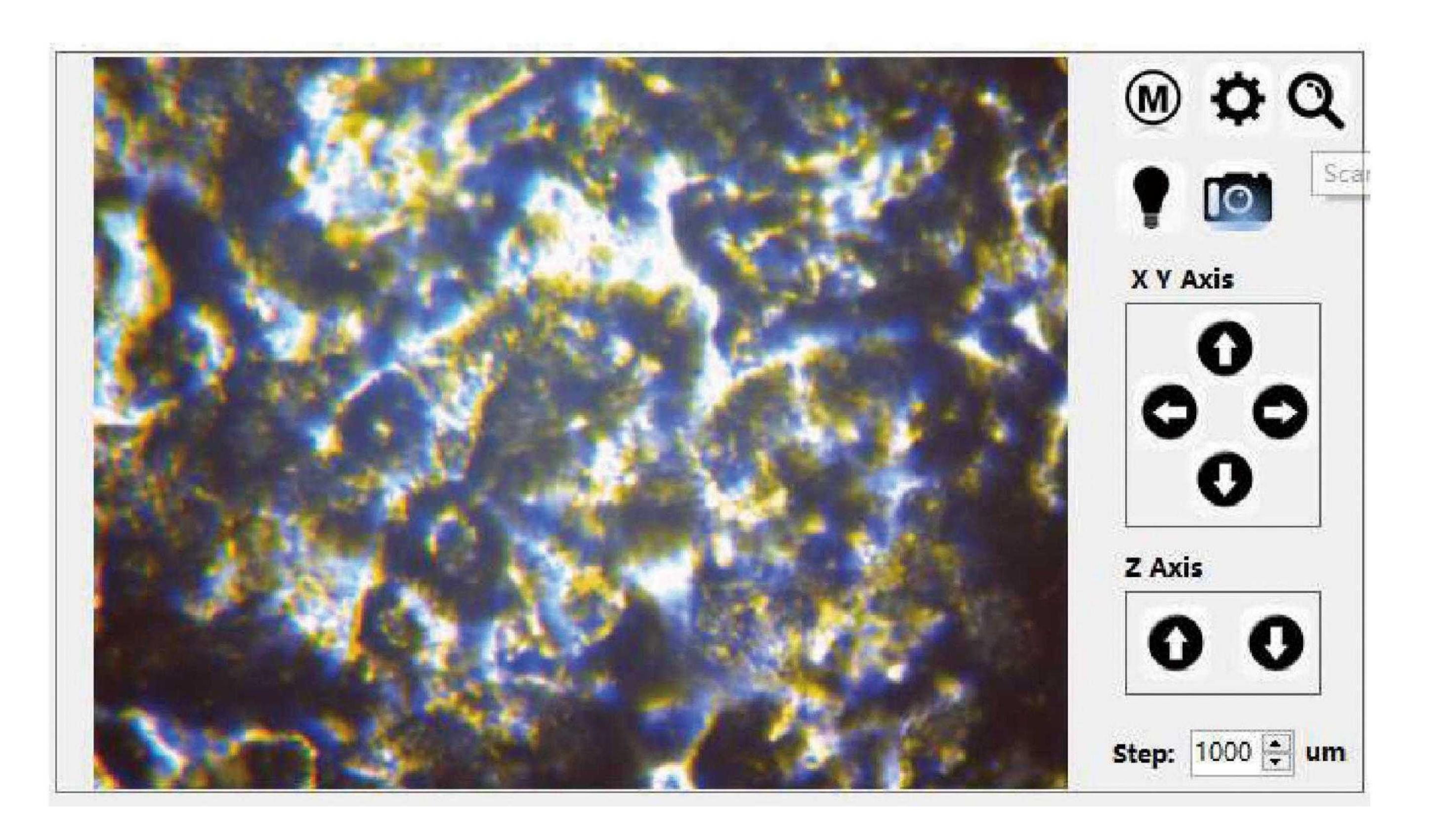


Fig 3 DTR8300TW imaging and scan control panel

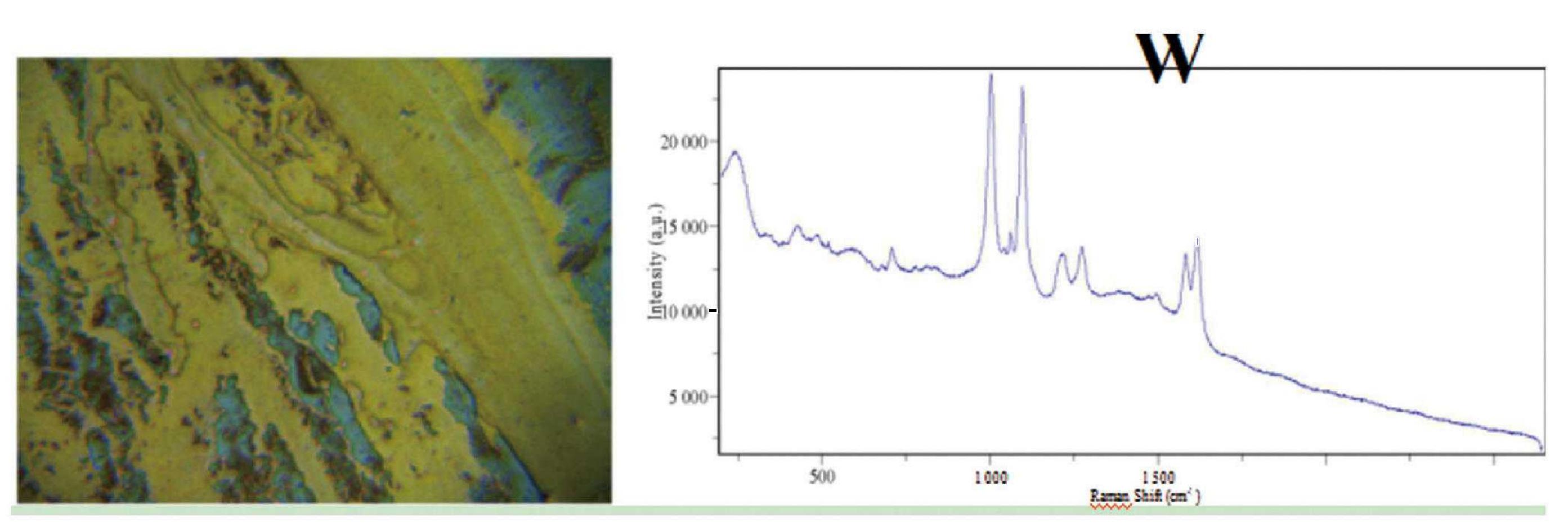
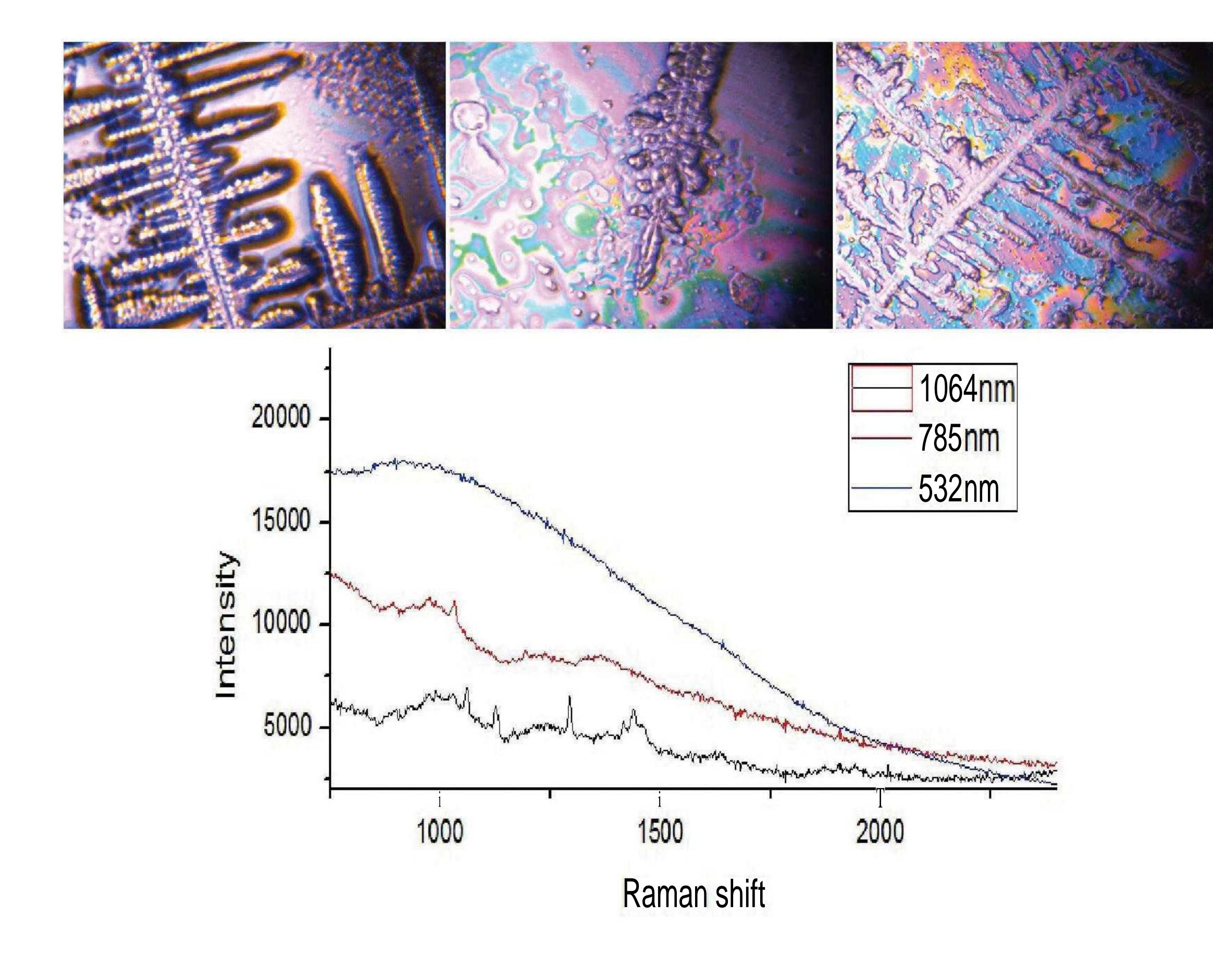


Fig 5 DTR8300TW SERS experiment 1 (the Left is sample picture, the right shows SERS Raman spectra)



60 000-

50 000-

500

20 000-10 000-

1 500 Raman Shift (cm⁻¹)

Fig 8 ATR8300TW measure Si Raman spectra (500mW, IS integration time)

1 000

2. Optical Performance

2.1 Spectmm

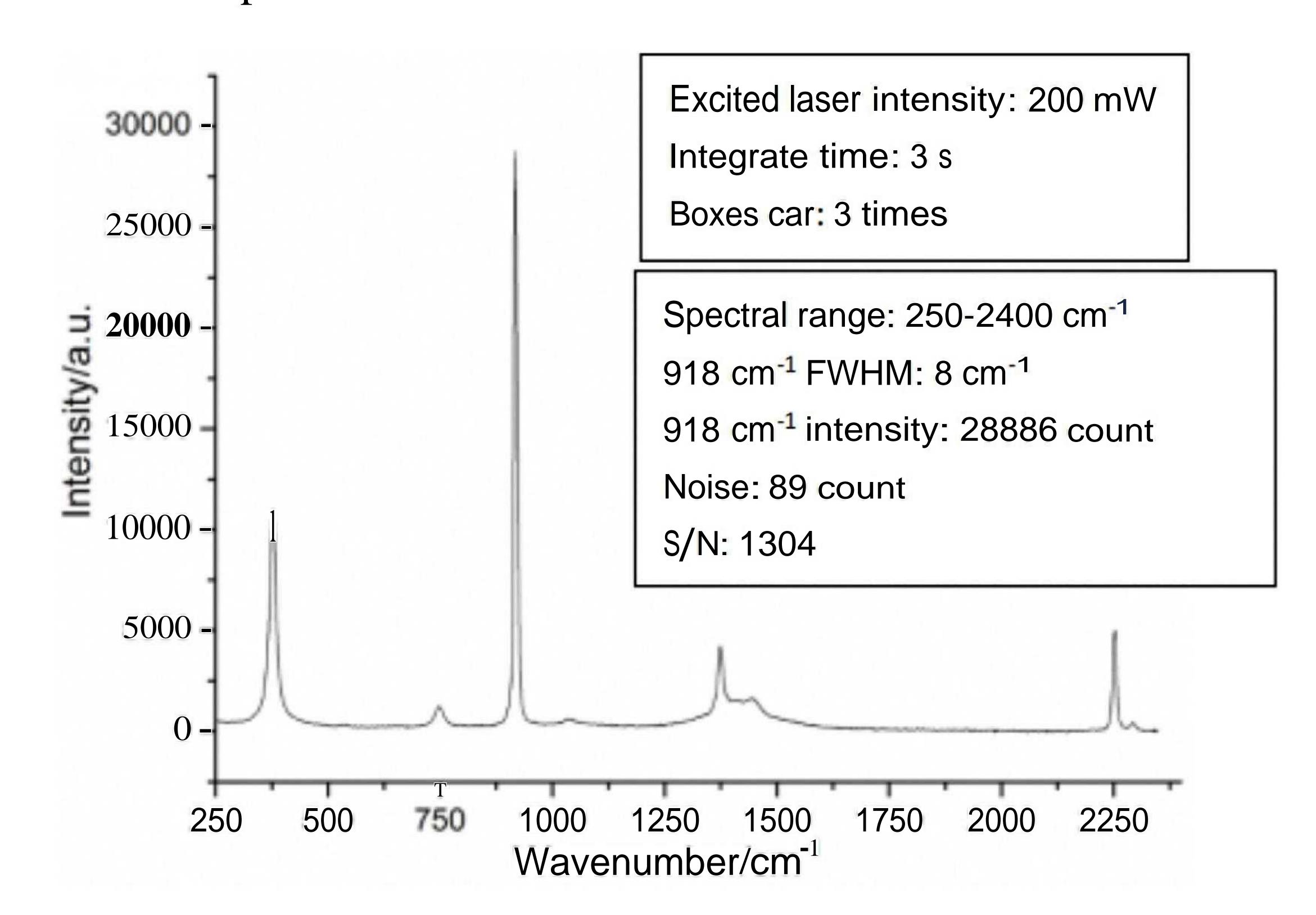


Fig 4 DTR8300TW acquire acetonitrile spectra

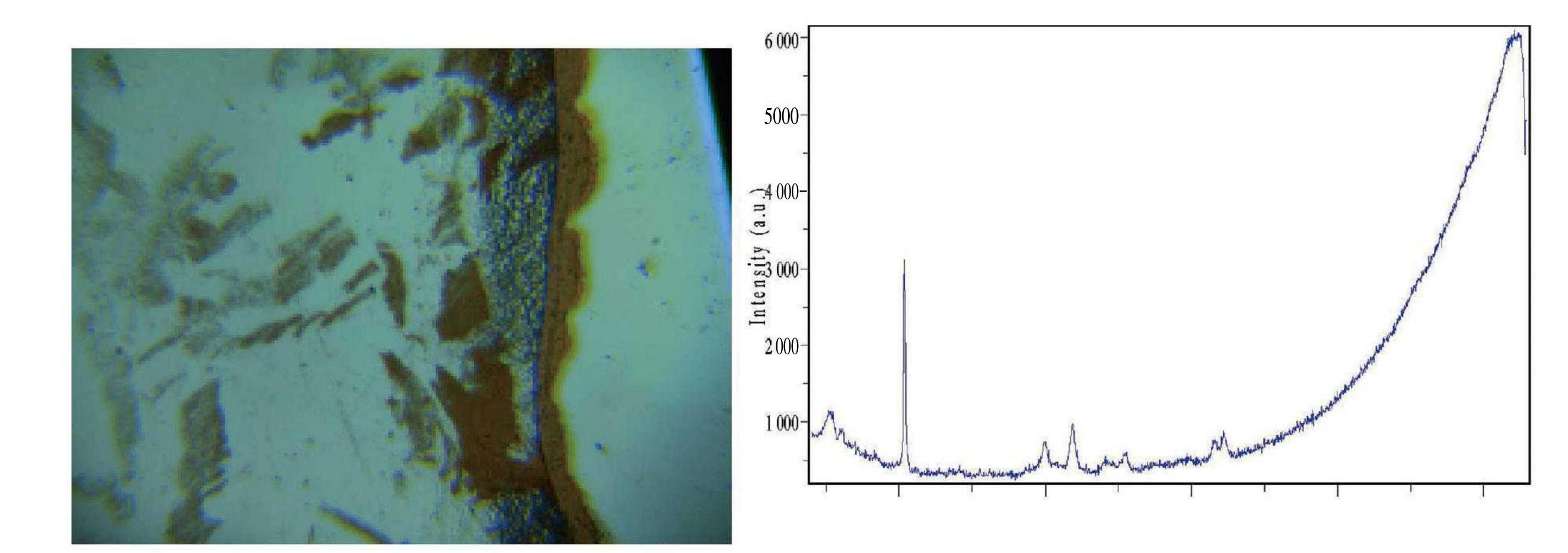


Fig 6 DTR8300TW SERS experiment
(the Left is sample picture, the right shows SERS Raman spectra)

Fig 7 DTR8300TW experiment to measure cell metabolite, the above three picture surface topograph, the below Raman spectrum scanned by DTR8300TW-1064, DTR8300TW-785, DTR8300TW-532.

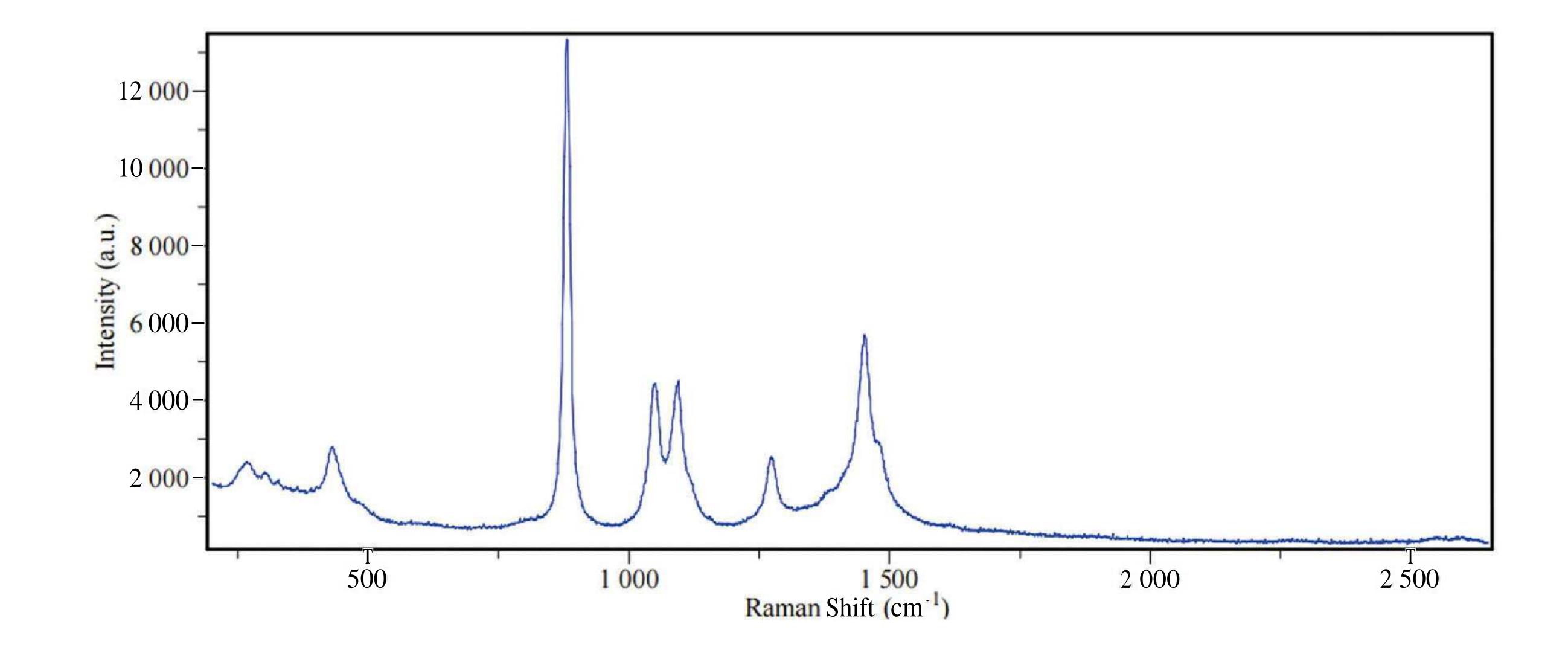


Fig 9 DTR8300TW measure alcohol Raman spectra (500mW, IS integration time)

2 500

2 000





Fig 15 Raman signal high throughput objective, focal length reach up to 8 mm;



