

# Fully Automated Raman Microscope Mapping DTR8500

## Features

Fully automated Raman imaging, auto-focus, auto-scan;

Large area imaging (50X50mm), Automated imaging spicing;

Max. 3 types of wavelengths lasers;

Ultra depth Imaging function (Optional);

High sensitivity, SNR>6000:1

True-Focus to ensure accurate Raman image

High spatial resolution

Exclusive software switch optical path

Fast positioning, fast find focus position

High quality objective, spot size at micrometre

5-mega camera provide clear image

USB2.0 direct connect to PC

### Application

Nano particles & new materials

Scientific research institute

Dialogical Science

Biological Science

Forensic medical identification

Materials science

Medical Immunology Analysis

Agricultural & food safety

Water pollution analysis

Gemstones and inorganic minerals identification



#### Description

◆ DTR8500 series Raman microscope integrates two or three lasers into the system, combine both advantages of Raman spectrometer and microscope in order to make "eyes see is to be detected" possible. Visualize accurate position by Raman detect platform, and the observer can detect Raman signal of samples on different surface status, meanwhile synchronizing on PC dispay microarea status to be detected, it has greatly facilitated Raman microarea detect.

DTR8500 series can perform auto-focus, auto-scan, one button operate can perform experiment in batches, no wait time to obtain high reliable scanned Raman data.;

DTR8500 configured exclusive objective for Raman system, it makes laser spot size close to diffraction limits, and using 5-mega camera display focus information intuitively on PC. It overcomes existing problem of common

Raman spectrometer, Raman signal collected focal plane could higher or lower than actual one, so that it improve Raman signal. DTR8500 exslusive software for optical path switch reduce optical path loss during camera imaging, it realize Raman signal collection is separated from camera imaging, and obtain the best signal intensity.

Meanwhile, DTR8500 use the highest Raman spectrometer with excellent sensitivity, SNR, stability are excel in the Raman research industry.



# Parameters

DTR8500Performance parameters	
Microscope Camera System	5-mega pixels
Focus Type	True Focus
Laser spot size	>lpm
Laser stability	$o/p < \pm 0.2\%$
Interface	USB2.0
X,Y-axis Electronic controlled two-din	ension platform
Move range	50 X 50 mm
Move resolution	0.1pm
Positioning Accuracy	1 pm
Scan Speed	20 mm/s
Z-axis (Auto-Focus)	
Focus Accuracy	≤ ±0.2 pm
Max range	20mm
Focus speed	Over 10 s

#### Fig 1 DTR8500 OrderGuide:

	Model	Laser wavelength/nm	Laser Power/mW	Wavenumber	Resolution/cm-1
Single wavelength Raman Microscope	DTR8500-532	<b>532</b>	100	200 -3700	5-7
	DTR8500-633	633	50	200 -3500	3 - 6
	DTR8500-785	785	500	200 -3500	3-8
	DTR8500-1064	1064	500	200 -2600	7 – 12
	DTR8500-830	830	500	200 -3500	3-8
Dual wavelength Raman Microscope	DTR8500-785+1064	785+1064	500	200 -3500	3-8
			500	200 -2600	7-12
	DTR8500-532+633	532+633	100	200 -3700	5-7
			<b>50</b>	200 -3500	3-6
	DTR8500-532+1064	532+1064	100	200 -3700	5-7
			500	200 -2600	7-12
	DTR8500-532+1064	532+785	100	200 -3700	5-7
			500	200 -3500	3-8
	DTR8500-532+1064	633+1064	50	200 -3500	3-6
			500	200 -2600	7-12
Tri-bands wavelength Raman Microscope	DTR8500-532+633+ 1064	532+633+1064	100	200 -3700	5-7
			<b>50</b>	200 -3500	3-6
			500	200 -2600	7-12
	DTR8500-532+785+ 1064	532+785+1064	100	200 -3700	5-7
			<b>50</b>	200 -3500	3-8
			500	200 –2600	7-12
High End	DATR8500LT Deep cooled down to -30°C, long integration time up to 1.3hrs	3 Wavelengths selection from 532,633,785,830,1064	As above	20%shorter wavenumber range	Resolution less abit



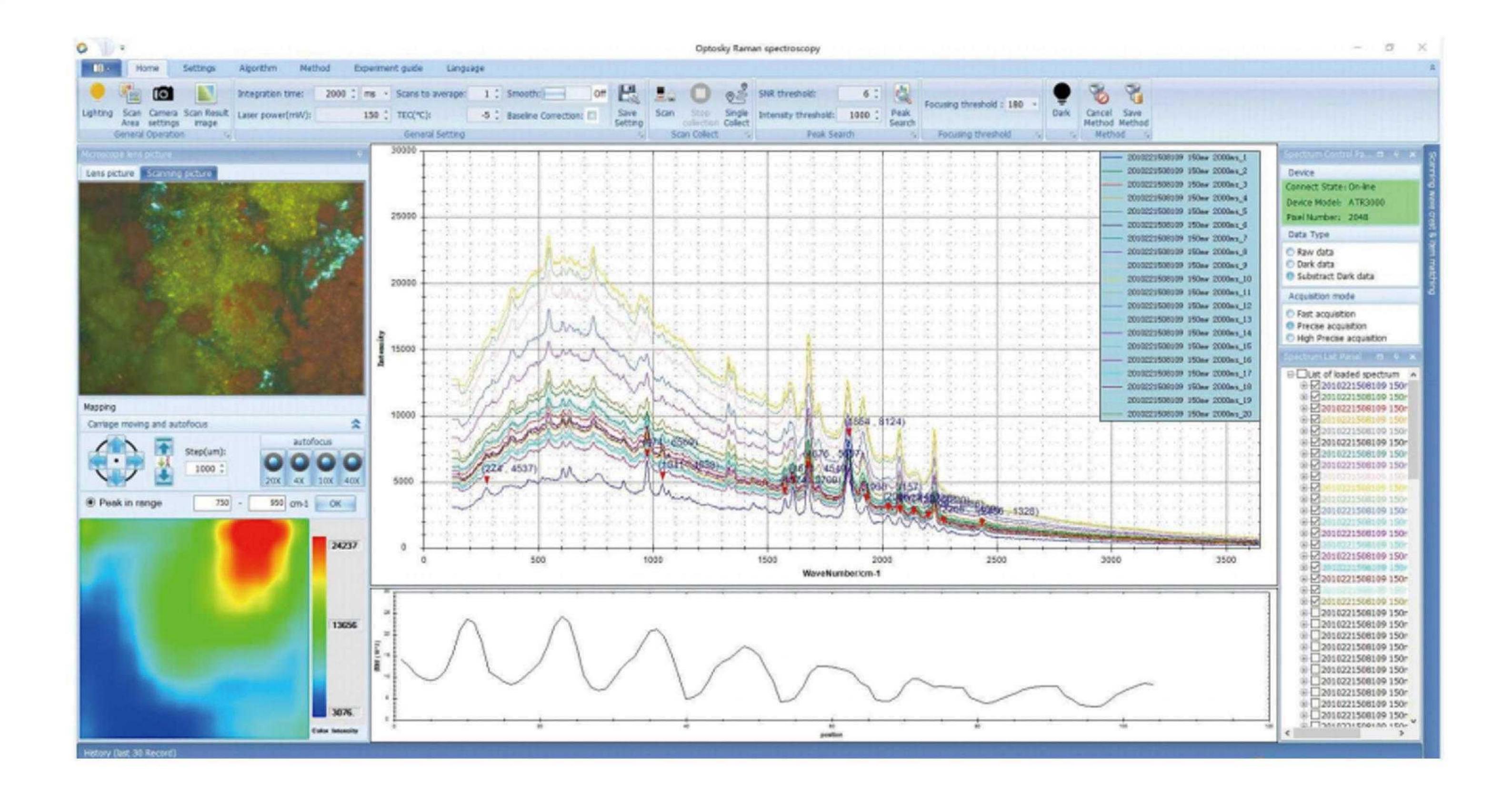


Fig 3 DTR8300TW imaging and scan control panel

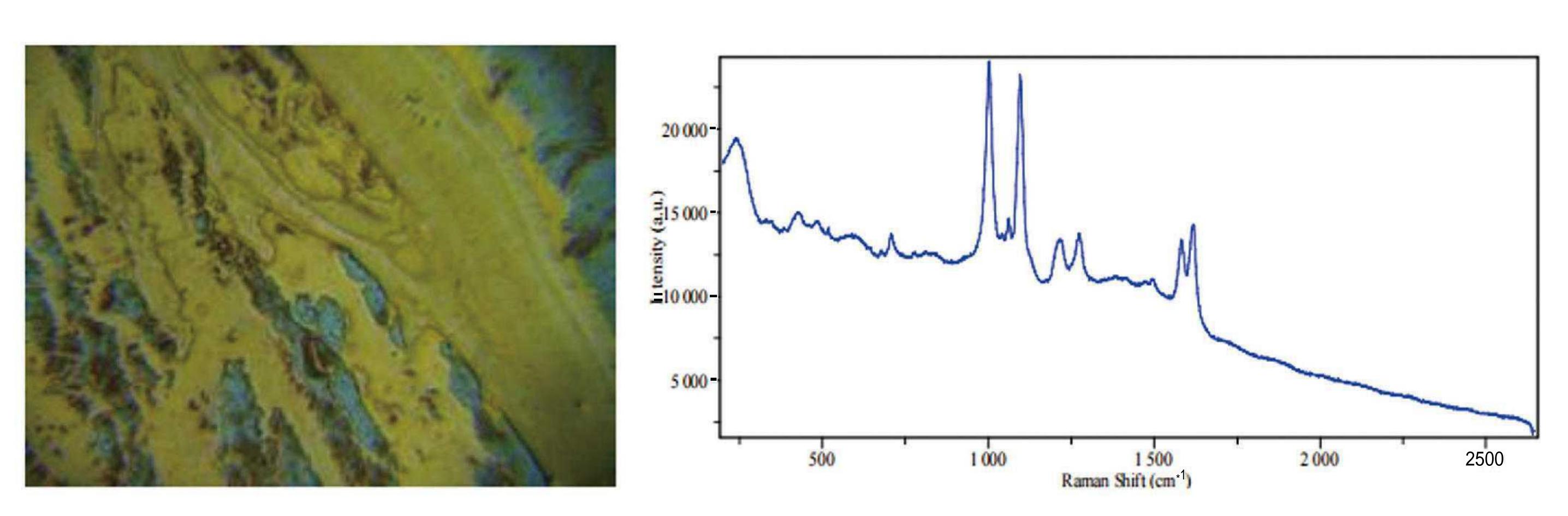


Fig 5 DTR8500 perform SERS 1 (The Left is sample picture, the right is SERS Raman spectra)

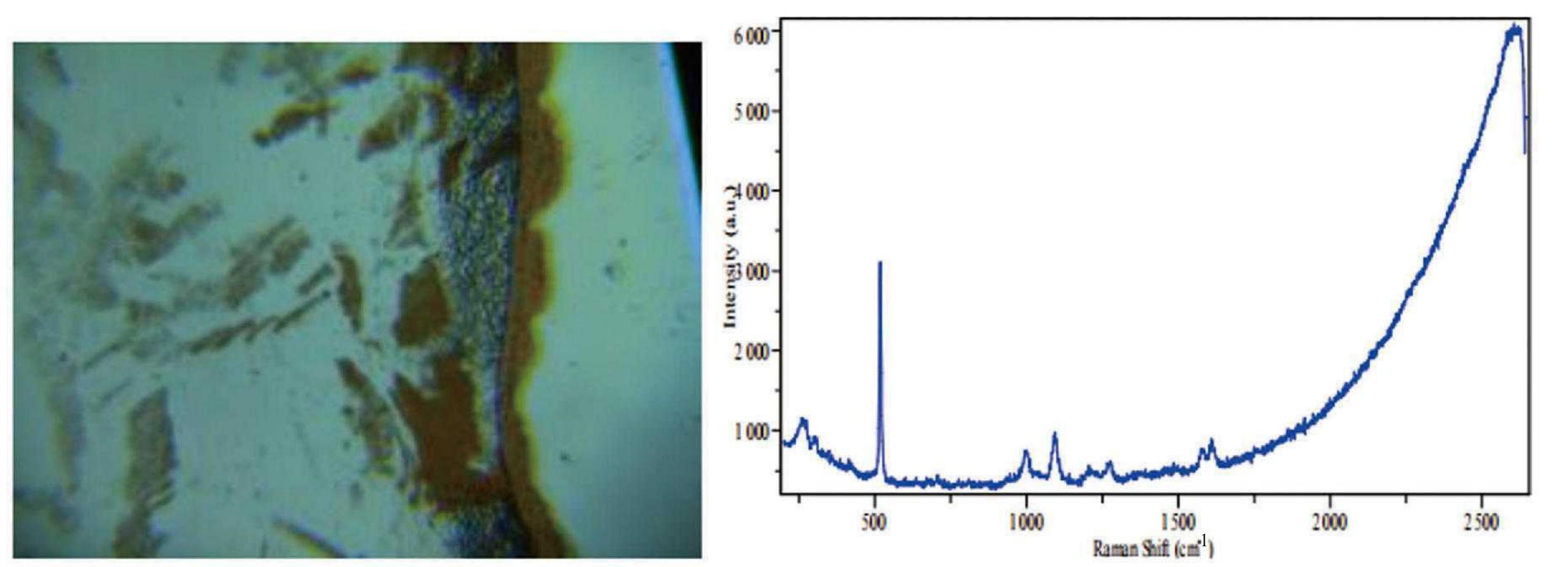


Fig 6 DTR8500 perform SERS test 2 (The Left is sample picture, the right is SERS Raman spectra)

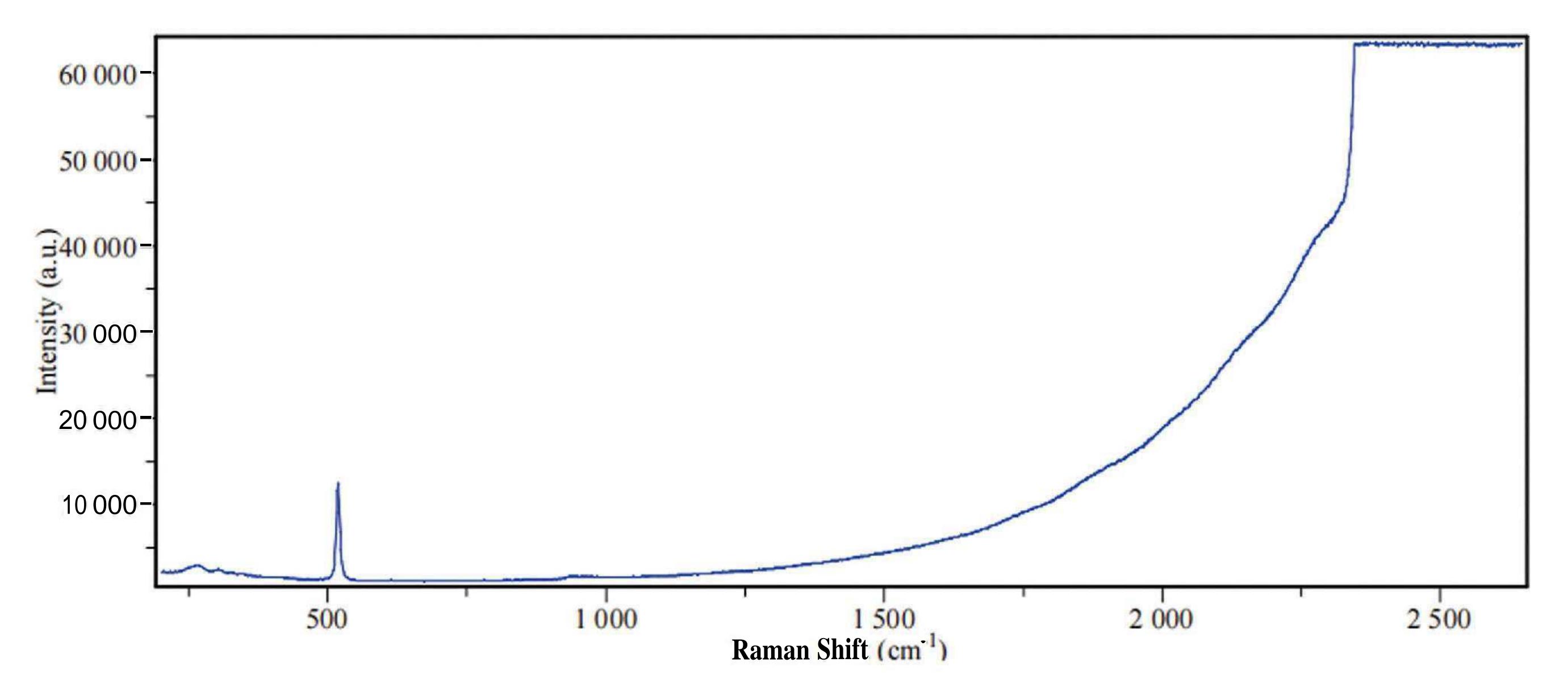


Fig 8 DTR8500 test Si Raman Spectra (SOOmW, 1S Integration time)



2 Optical Performance

#### 2.1 Spectrum

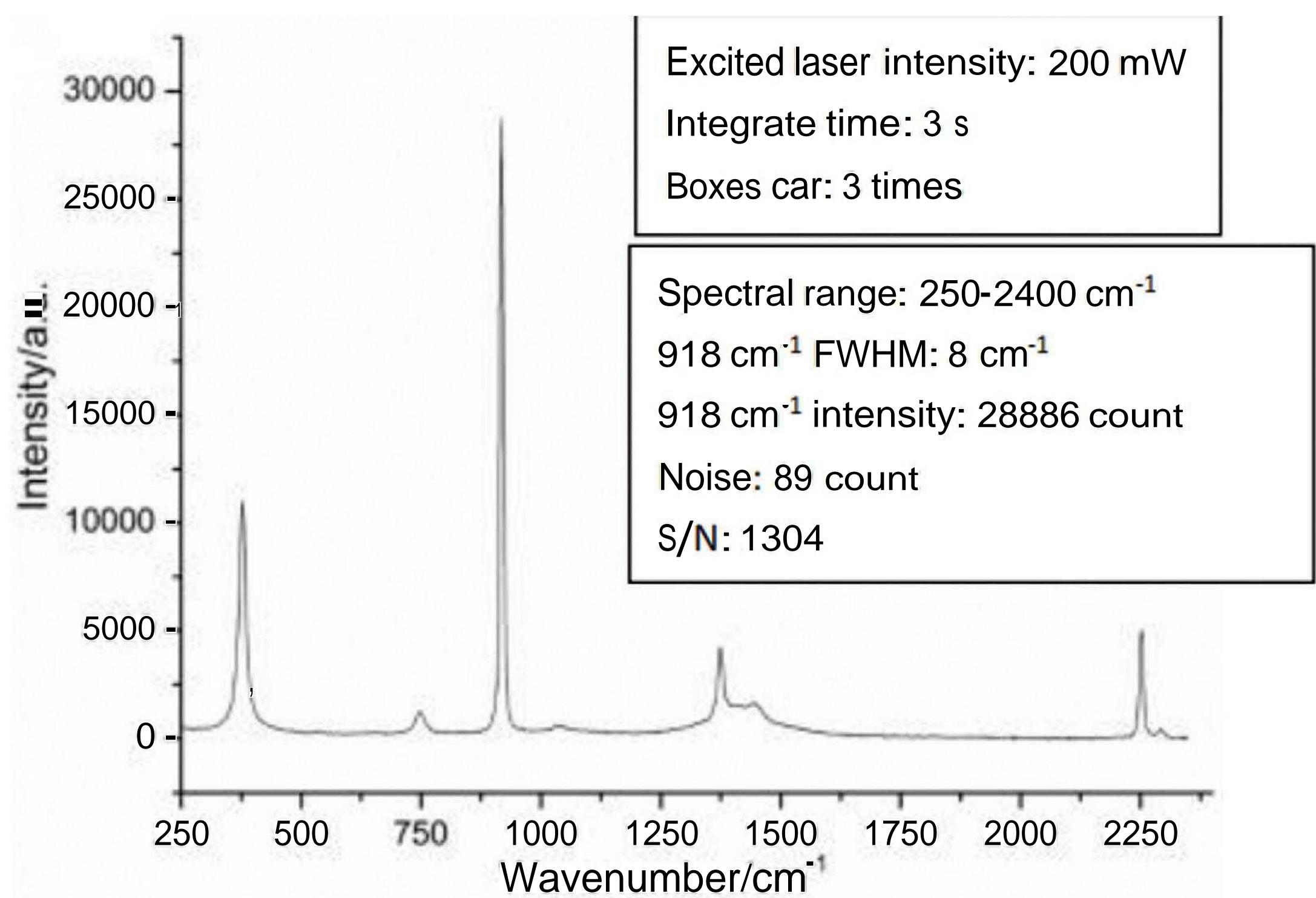


Fig 4 DTR8500 acquire acetonitrile spectrum

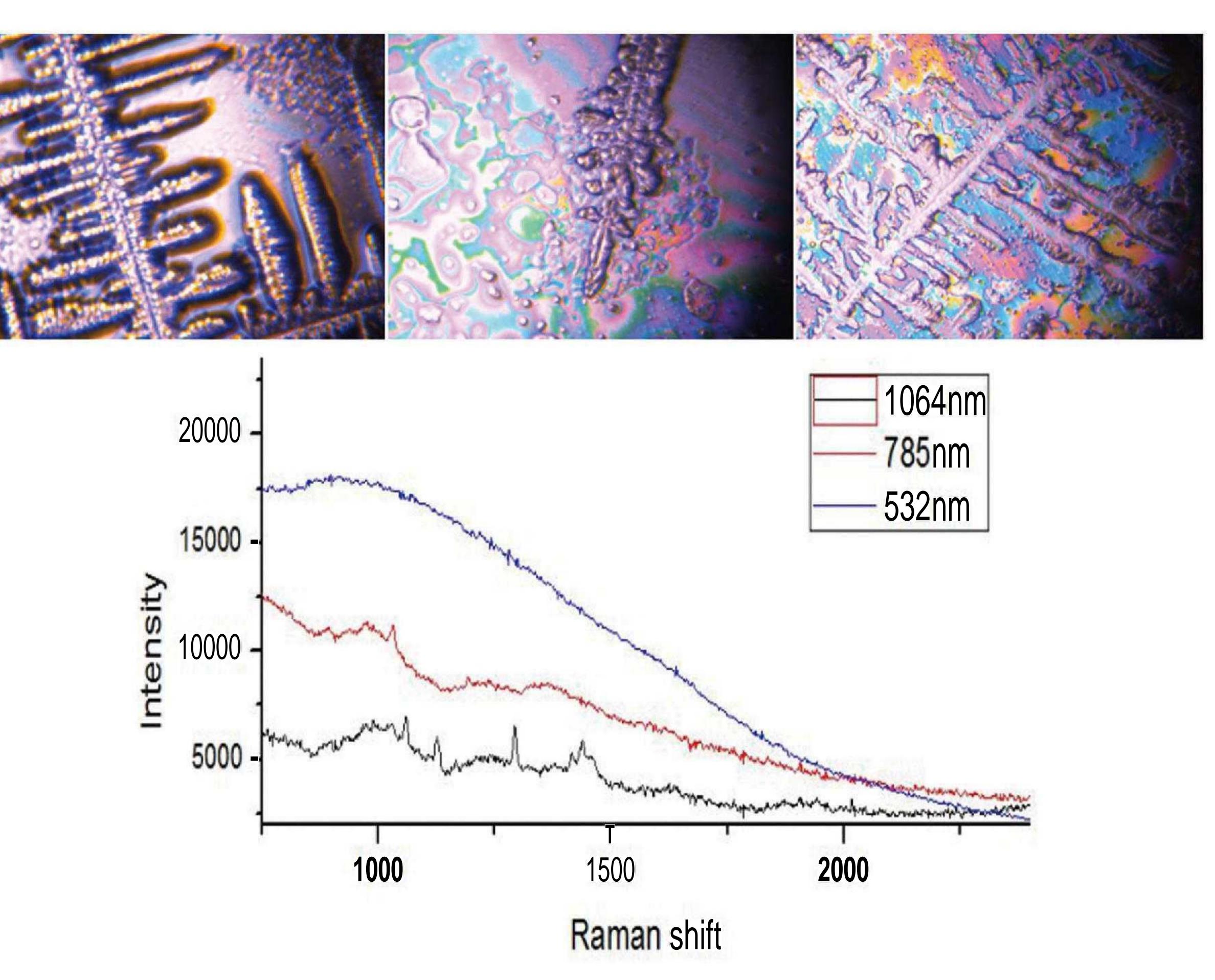


Fig 7 DTR8500 Test cell metabolite, the above surface outlook, the below is Raman spectrum separately by ATR8500-1064, ATR8500-785, ATR8500-532

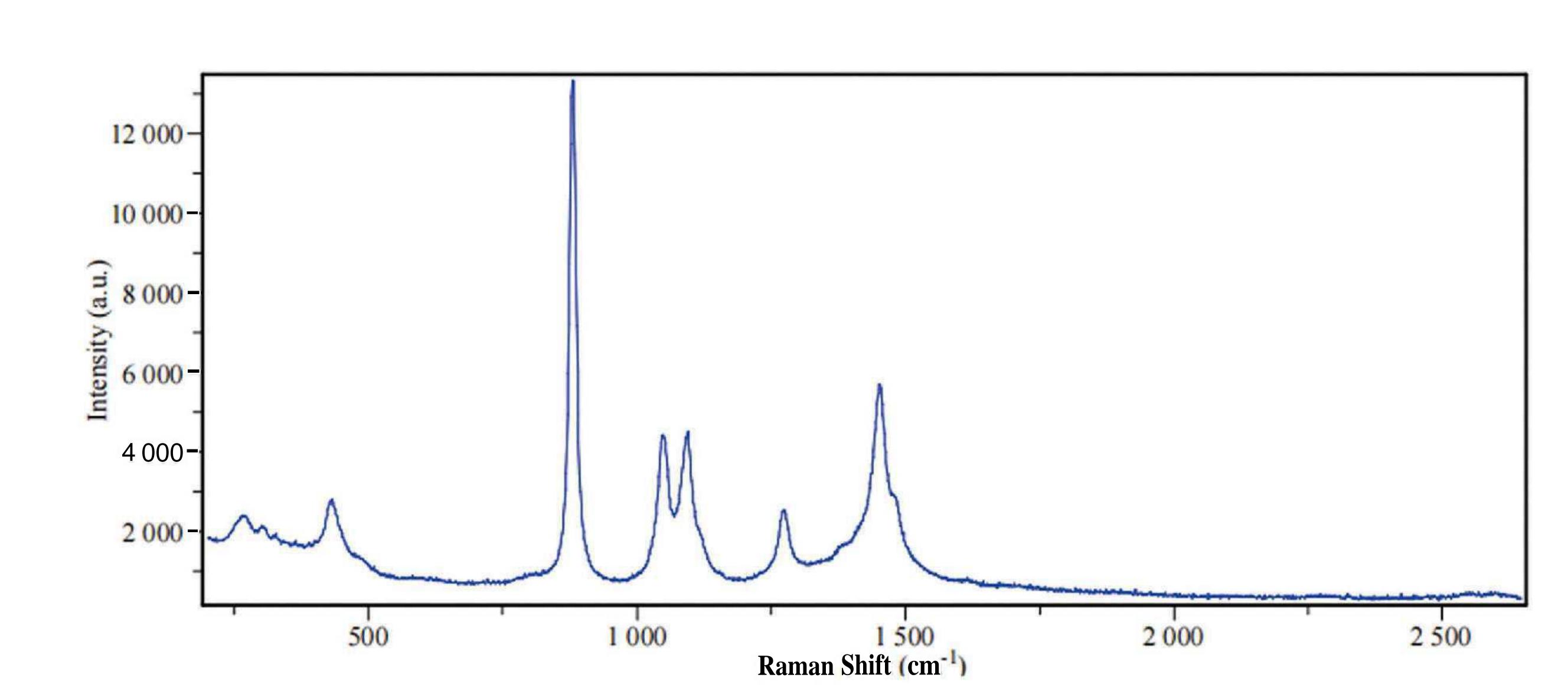


Fig 9 DTR8500 measure ethanol spectra (500mW, 1S integration time)

Fig 10 Raman signal high through put objective, objective as long as 8mm;