

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
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Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06

Ижевск (3412)26-03-58
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Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13

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Тверь (4822)63-31-35
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Череповец (8202)49-02-64
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Рамановский микроскоп

Raman microscope imaging



1.Description:

Optosky Raman microscope combines the benefits of microscope and Raman spectrometer. It becomes possible to see macro or micro areas of samples on the computer screen with just a single mouse click. When accurate positioning is visualized, the observer can detect Raman signals under various surface conditions, and synchronized Mapping can be displayed intuitively on the screen at one click operation. As a result, it provides great convenience to detect micro or macro areas of samples. Combine unique patented conjugate focusing(true confocal) system with accurate image processing algorithm, and it enables a very small sample area to be analyzed, as well as it requires minimal operator training and maintenance, yet resulting in uniform result not just spectra.

ATR8300 is equipped with tailor-made objective, and a laser spot on the sample becomes very close to the diffraction limit, then focal information can be displayed accurate and intuitive on the screen with the 3-megapixel camera. This configuration improves Raman spectral quality for overcoming the limitations of Raman systems where the focal plane for Raman signal collection is slightly above or below the imaging plane.

ATR8300 works stably with no moving components of optical path switch, hence it avoids loss of the optical path while imaging formed, and it gains an optimized signal for separating imaging formed from Raman signal collection.

2.Optical Performance:

2.1 Spectrum showing

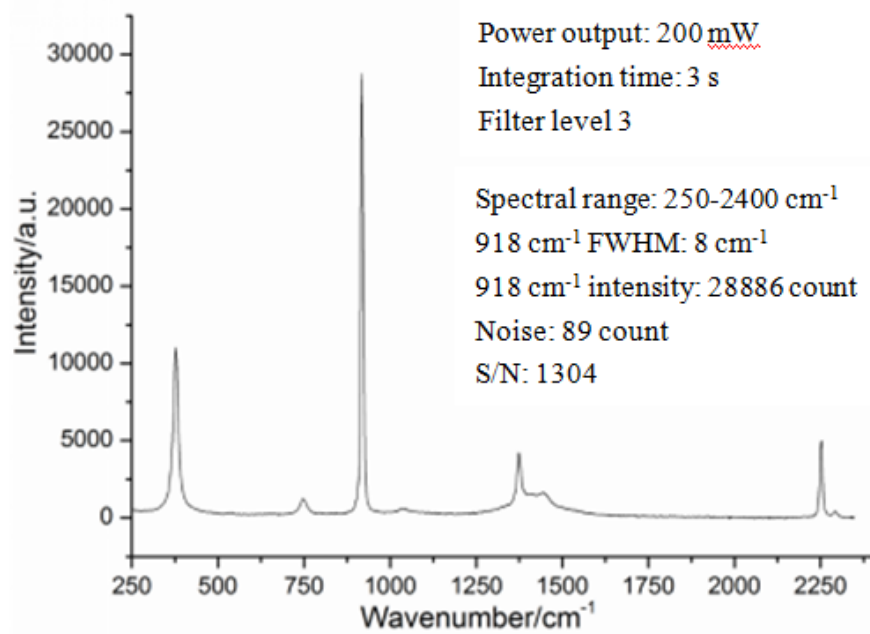


Fig. 2 ATR8300 collect acetonitrile spectra

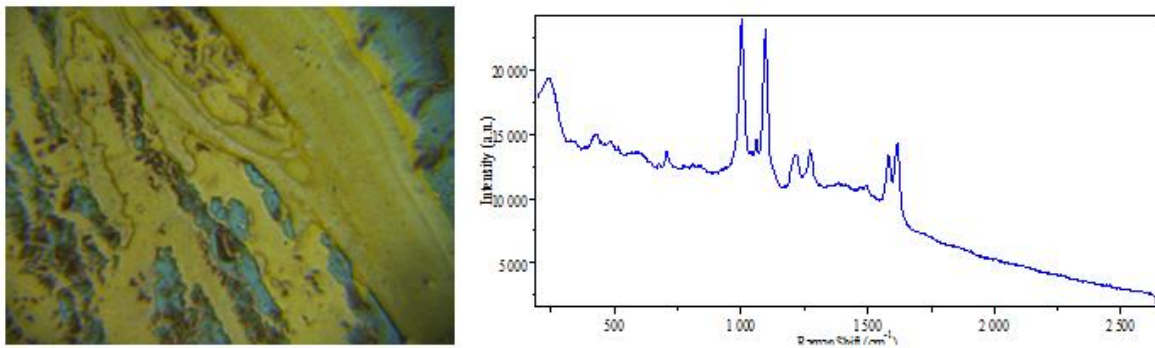
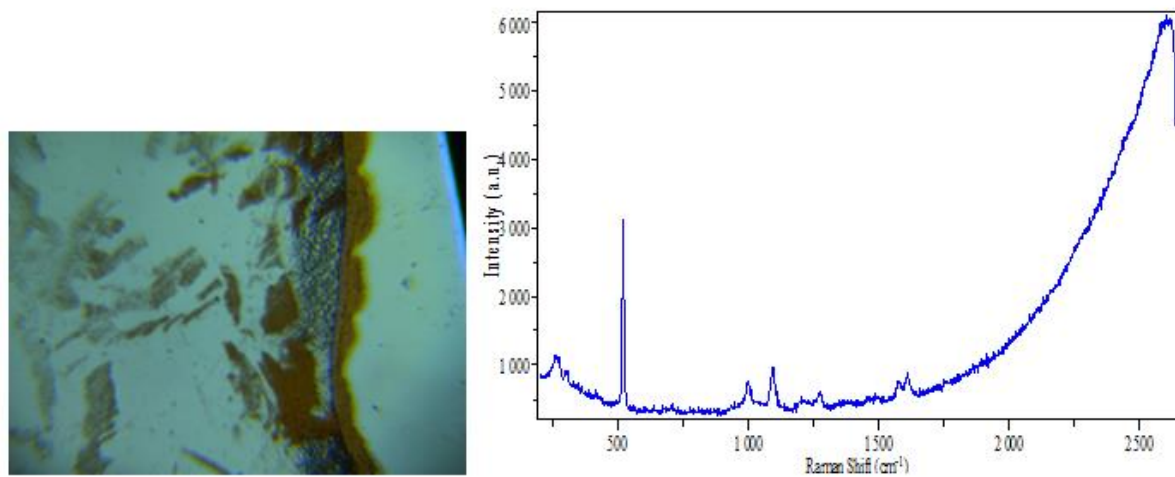


Fig.2 ATR8300 Sers experiment 1 (Left picture is sample, and right picture is Sers Raman spectra)



ATR8300 Sers experiment 2 (left picture is sample, right picture is Sers Raman spectra)

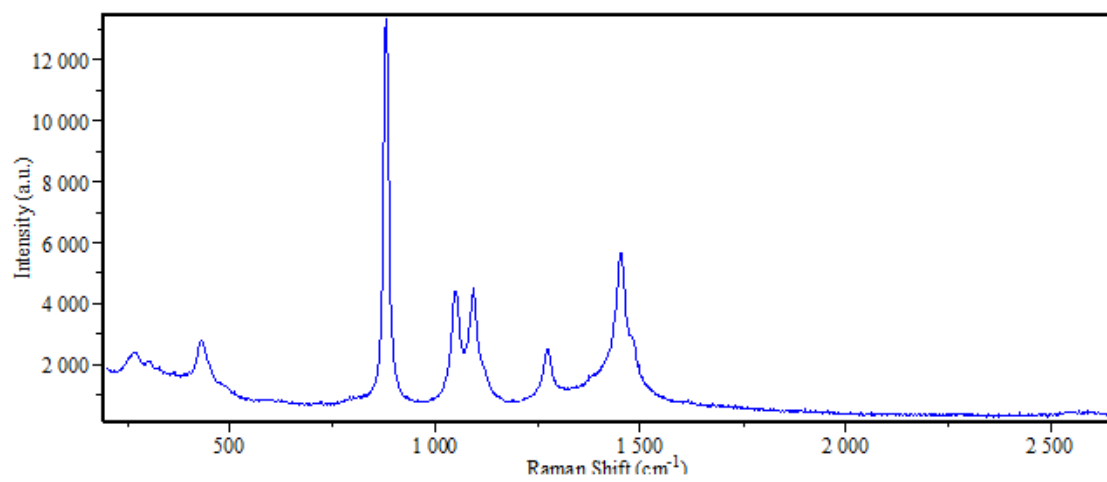


Fig 4 ATR8300 measure alcohol spectra (500mW, integration time:1S)

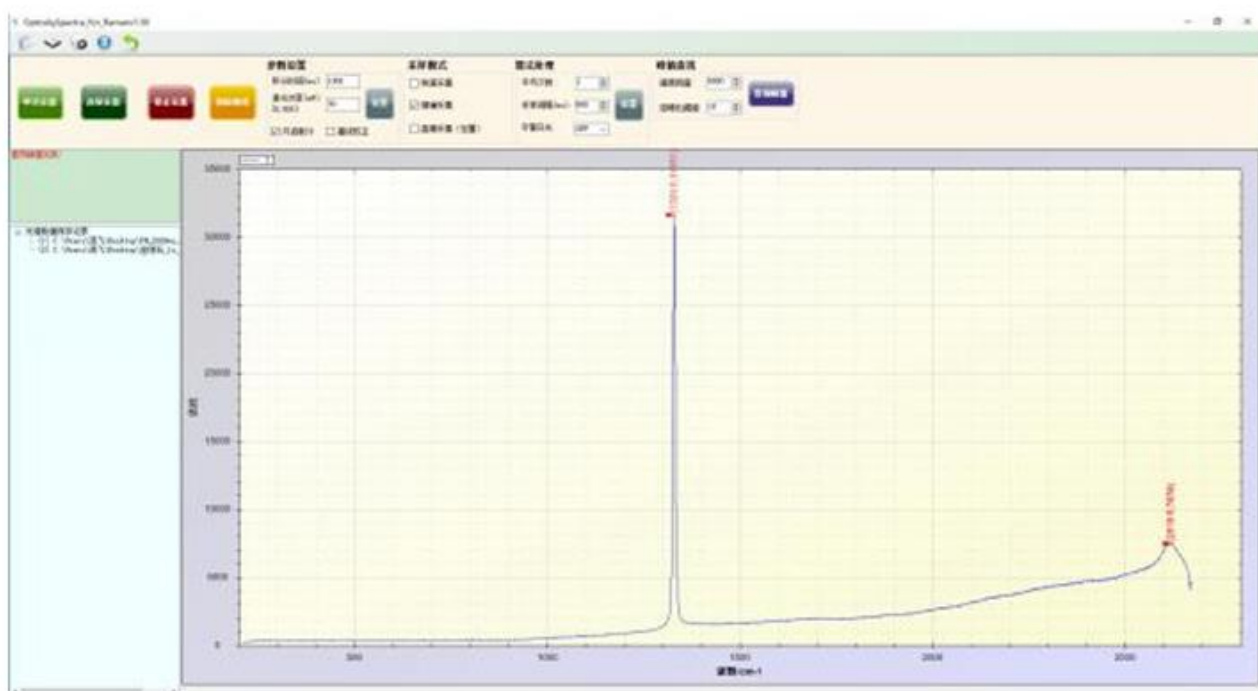


Fig 5 ATR8300 measure diamond Raman spectra (30mW, integration time: 1S)

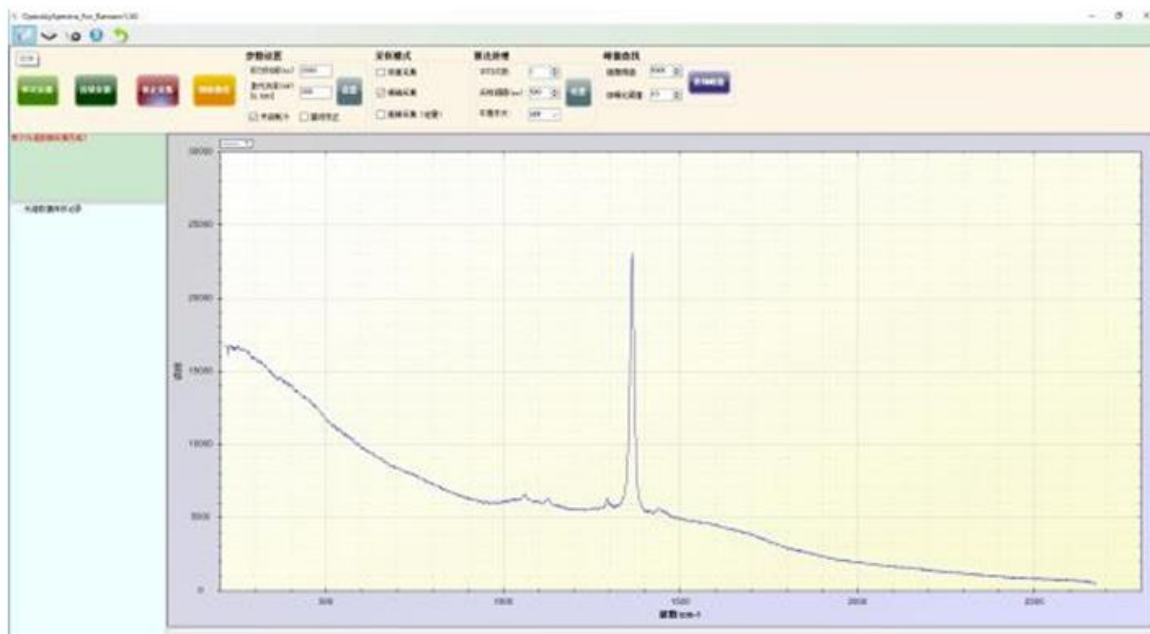


Fig 6 ATR8300 measure boron carbide (**PN**) spectra (200mW, integration time: 2S)

2.2.Raman Resolution:

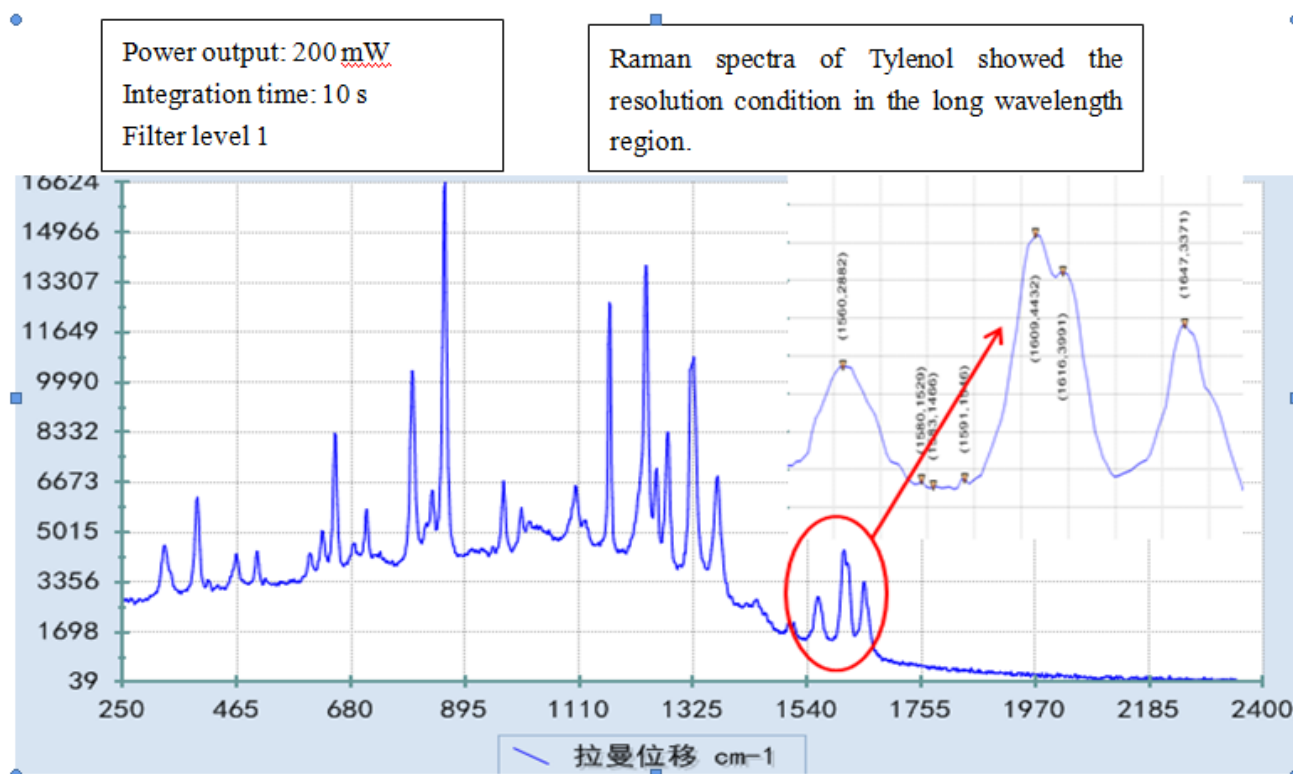


Fig 7 Tylenol spectra shows clear 1610/1615 cm^{-1} vibration peak

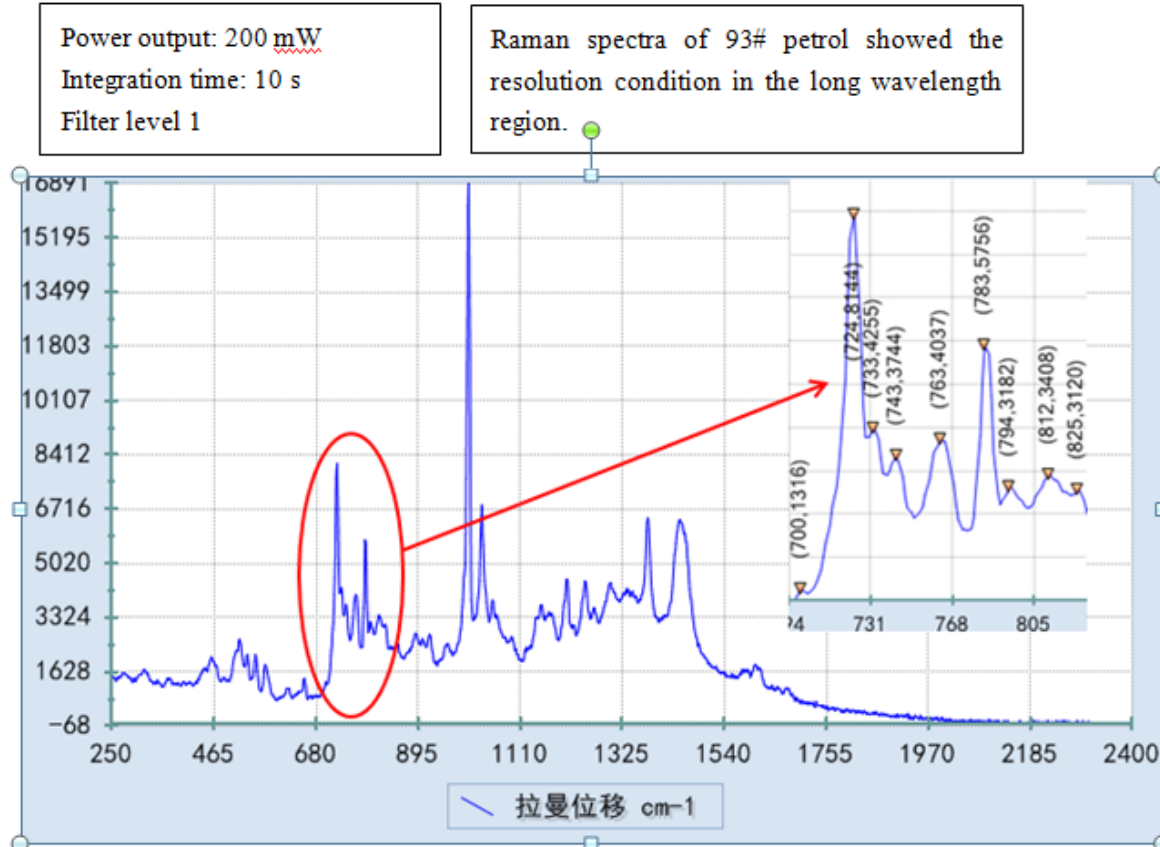


Fig 8 93# petrol Raman spectra, 723/732/742 cm^{-1} spectral shift is clearly recognized

2.3 Reliability

Fig3.1, Fig3.2 temperature stability is measured by ATR8300, keep stable above an hour for each temperature node ranging between 5-40 $^{\circ}\text{C}$. Sample measured is acetonitrile, wavenumbers shift $\leq 1\text{cm}^{-1}$ (Fig 3.1), peak top intensity change $< 10\%$ (Fig 3.2)

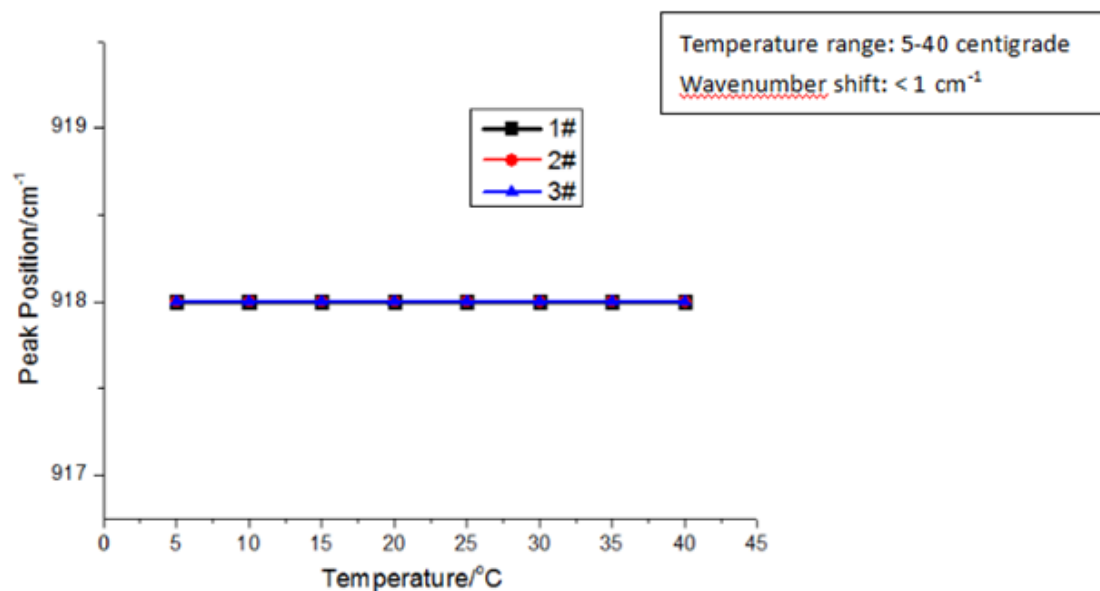


Fig. 3.1 Wavenumber shift results testing from 5 $^{\circ}\text{C}$ to 40 $^{\circ}\text{C}$ of five ATR2000 portable Raman spectrometers

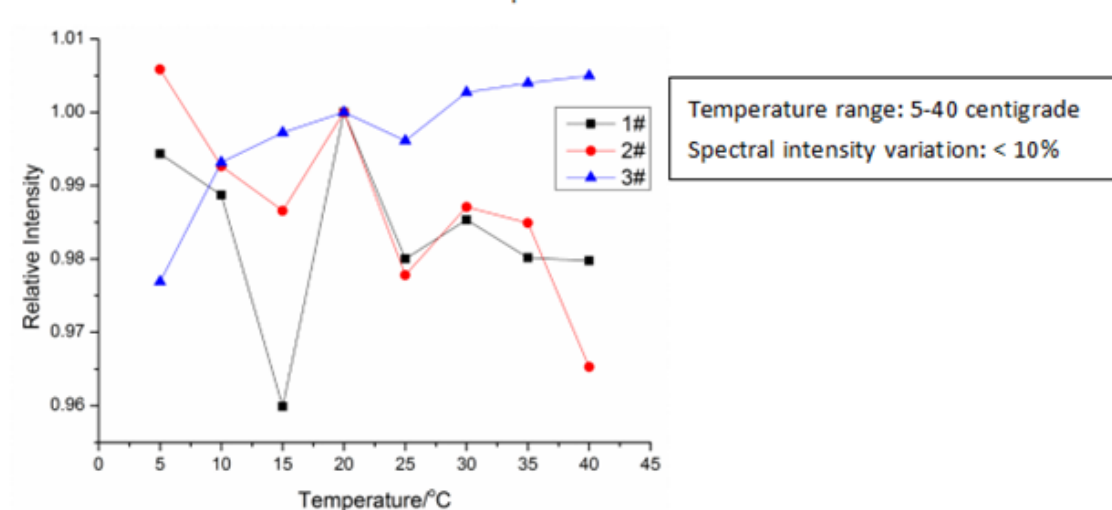


Fig. 3.2 Intensity variation testing from 5 °C to 40 °C of five ATR2000 portable Raman spectrometers

RAMAN SPECTROMETER SYSTEM PARAMETERS

Interface	USB2.0
Microscope Camera System	3-megapixel /5-megapixel camera
Focus Type	True confocal

RAMAN SPECTROMETER RELIABILITY

Spectral Stability	$\sigma/\mu < 0.5\%$ (COT 8 hours)
Temperature Stability	Spectral shift $\leq 1 \text{ cm}^{-1}$ (10-40 °C)

RAMAN SPECTROMETER OPTICAL PARAMETERS

Spectral Range	250-2700, 200-3500, 200-4300 cm^{-1} (available in customer wavelengths range down to 50 cm^{-1})
Resolution	6 cm^{-1}
SNR	>6000:1

RAMAN SPECTROMETER DETECTOR

Detector Model	TE-cooled for 785nm InGaAs cooled for 1064nm
Dynamic Range	13000:1
Pixel Size	14 μm * 14 μm

RAMAN SPECTROMETER LASER PARAMETERS

RAMAN SPECTROMETER SYSTEM PARAMETERS

Excitation Wavelength	785 nm (532,633,830,1064 nm for optional)
Laser Linewidth	0.08 nm
Laser Output	500mW (Max. 100mW for 532nm)
Power Stability	σ/μ < $\pm$ 0.2%
Laser Spot Diameter	>1 μ m

X,Y-AXIS ELECTRONIC CONTROLLED PLATFORM

Moving Range	5 X 5 cm
Scan Speed	20mm/s

Z-AXIS (AUTO-FOCUS)

Focus Accuracy	$\leq \pm$ 0.2 μ m
Max Range	20mm
Focus Speed	Less than 10 s

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