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1064nm Portable Raman Analyzer ATR3000-1064

Feature

- Deep-cooled linear InGaAs CCD sensor；
- Cooled down to -20℃
- Low noise circuit;
- Powerful embedded software;
- Fluorescence-free interruption;
- Peak finding and display;;
- Android 6.0 operation system;
- 11.6-inch capacitive touch screen, multi-touch control;
- High-definition touch screen，1920X1080；
- USB 2.0;
- User friendly human-machine interface;;
- Battery life span> 5h;
- Support LAN remote control;
- IP67 ;

Application:

- Pharmaceutical Engineering
- Public Safety, Forensic Analysis
- Agriculture and Food Safety
- Gemstones Identification
- Environmental Science
- Biological Science

Description

ATR3000-1064 is a type of Portable Raman Analyzer with an excitation wavelength of 1064nm, and as a member of ATR3110 series enjoying popularity in scientific research sectors. It employs 1064nm laser, Raman filter sets, high-sensitivity InGaAs array, TE cooled, down to -20℃, resulting in optimized SNR and higher dynamic range.

1064nm has the lowest fluorescence, and it avoids fluorescence interference to be applied to many high fluorescent samples, such as dyes, inks, petroleum products, biological samples etc. ATR3110-1064nm covers spectral range of 200~65000px-1, spectral resolution of 10 cm-1.

ATR3110-1064nm is designed with compact size, light weight and low consumption, so it can provide laboratorial Raman detection at any places. It suits to scientific research in laboratory for accurate and reliable detecting results. Its excellent low stray light enables spectrometers to be applied to a wide industries, such as it can detect dark, colorful, fluorescent, and biological samples, virus, fuel, petrol, plant oil, pharmaceutical drugs, explosives etc.

Datasheet

Specifications

ATR3000-1064 System	
Interface	USB 2.0 or WIFI
Operative System	Android 6.0
Screen	11.6-inch capacitive touch screen, multi-touch control;
Screen Resolution	1920X1080
Battery life span	>5 h
Integration Time	4ms - 120s
Power Voltage	DC 19V(+/-5%)
Operating Temp.	-10~40 ℃
Operating Humidity	< 95%
Dimension(L*W*H)	$40 \times 30 \times 18$ cm^3
Weight	7.5 Kg
Reliability	
Spectral Stability	σ/μ < 0.5% (COT 8 hours)
Temp. Stability	Spectral Shift ≤ 1 cm^{-1} (10-40 ℃)
Spectral Intensity shift (in 5 ~ 40 ℃)	<±5%
Optical Prameters	
Spectral Range (cm^{-1})	200-2600
Resolution (cm^{-1})	10
SNR	>3000:1
Detector	
Type	High-sensitivity 512pixels InGaAs CCD
Cooled down to	-20 ℃
Detect range	900-1700 nm
Effective pixels	512
Dynamic Range	50000：1
Pixel size	25 ×500 µm
Exitation Laser	

Central Wavelength	1064 nm (+/-0.5nm)
Semi-peak width	0.1 nm
Max. Output	≥500 mW
Power Stability	σ/μ <±0.2%
Raman Probe	
Operating Distance	6 mm
Blocking of filters	OD>8
Numerical aperture	0.3
Aperture	7mm

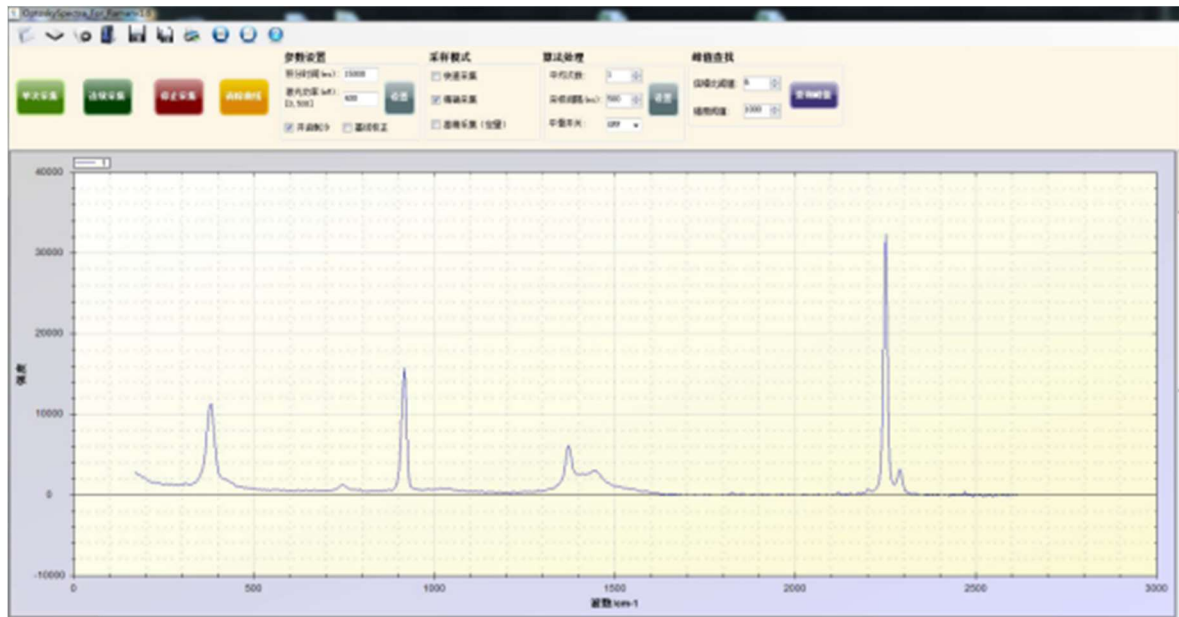Fig 1 ATR3000-1064 picture

2. 1064nm Raman Applications

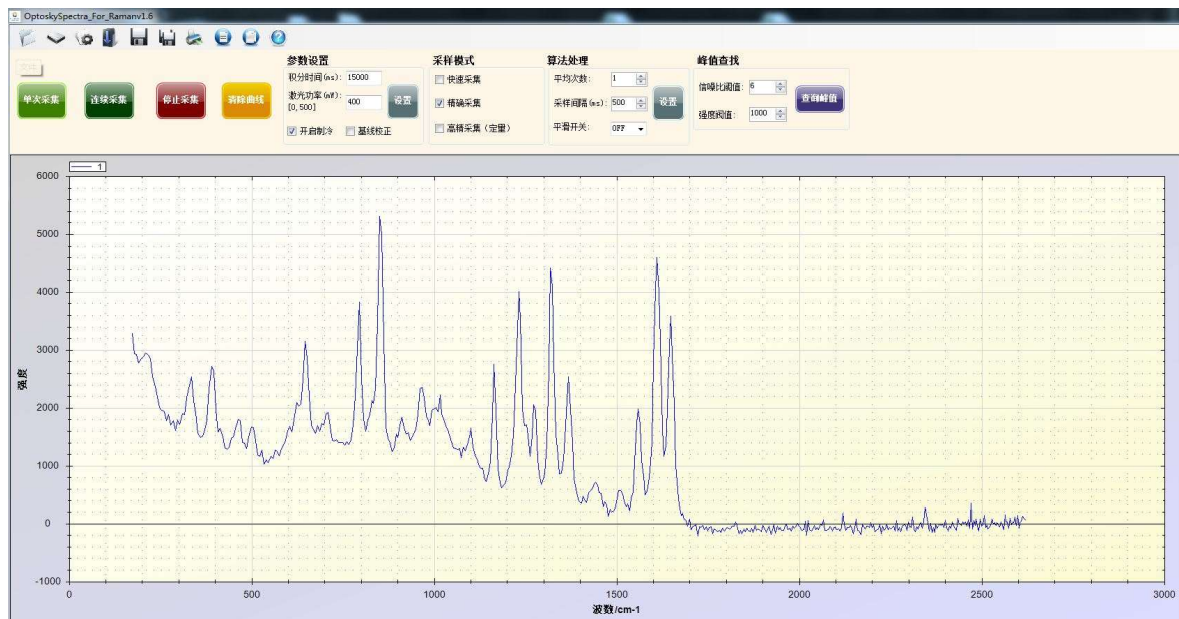Fig 2 ATR3000-1064 detect spectrum（Sample: Acetonitrile, laser power: 400mW, integration time: 15s）

Fig 3 ATR3000-1064 detect spectrum（sample: Tylenol, laser power: 400mW, integration time: 15s）
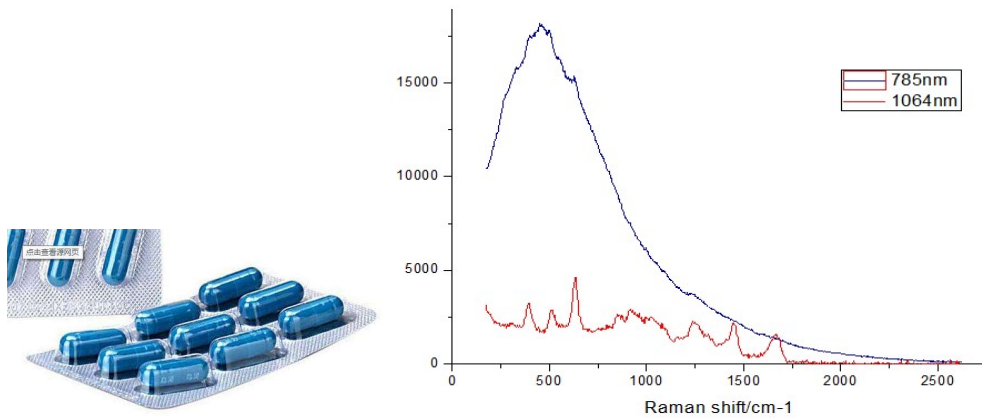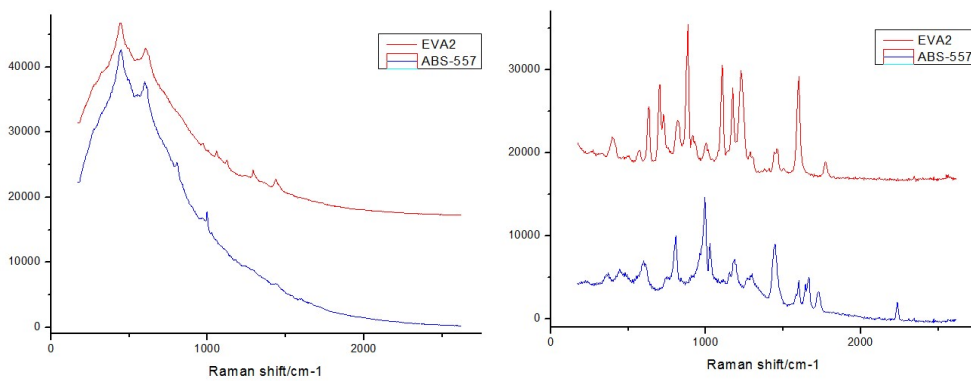
Fig 4 ATR3000-1064 applied in pharmaceutical industry

Fig 5 Two types of plastics, difficult to tell from outlook, 785nm Raman cannot identify (left picture),1064nm Raman can identify differences at ease(right picture)
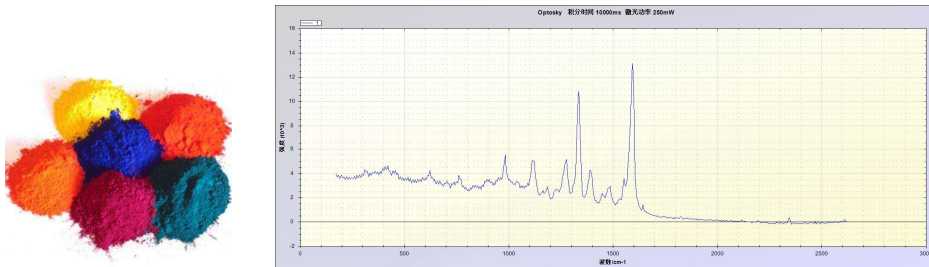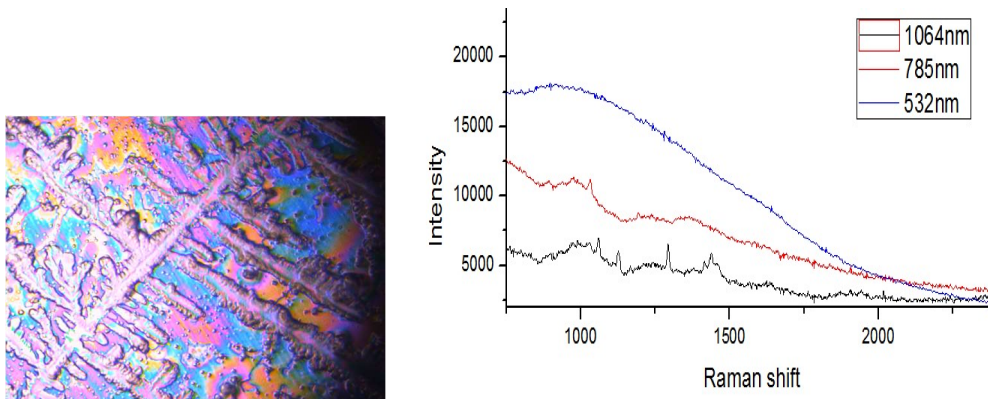

Fig 6 ATR3000-1064 detect paints, dyes

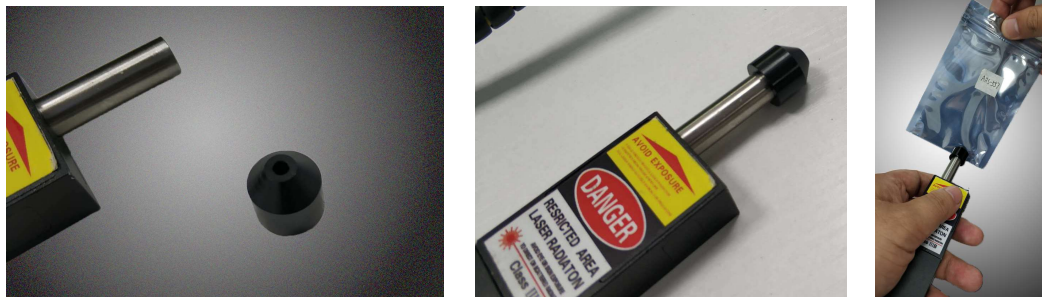FFig 7 ATR3000-1064 applied in biomedical industry

2. Measure Accessories

Fig 8 Raman probe for solid, power
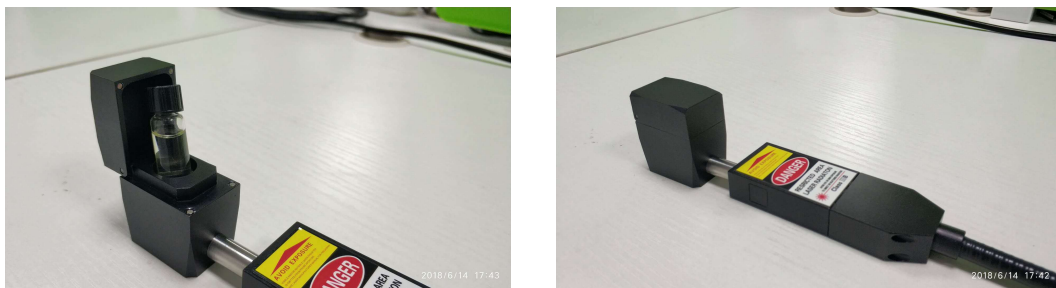

Fig 9 Sample cell for fluid（Thermo bottle）

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Fig 10 test cell for fluid（Liquid chromatography bottle）**(Optional）**

Fig 11 Raman probe gun **(optional)**

Fig 12 Measuring adjustable holder (Optional)