Wide Spectral Range Raman Analyzer Process Instruments 785nm Deep Cooling

Our Product Introduction

Basic Information

- Place of Origin: CHINA
- Brand Name: JINSP
- Certification: CE
- Model Number: RS2000
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: Customized Packaging
- Delivery Time: 60-80working days
- Payment Terms: TT
- Supply Ability: 20 PCS/70-90 days

Product Specification

- Laser Wavelength: 785nm
- Wavelength Accuracy: 0.2nm
- Wavelength Stability: 0.01nm
- Connectivity Interface: USB 2.0
- Output Data Format: Spc Standard Spectrum, Prn, Txt And Other Formats Are Optional
- Communication Protocols: Modbus
- Power Supply: 100 ~ 240 VAC 50 ~ 60 Hz
- Operating Temperature: 0 ~ 40
- Power Consumption: 50W
- Detection Accuracy: 0.01%
- Highlight: **Wide Spectral Range Raman Analyzer**, **Raman Analyzer Process Instruments 785nm**

More Images

Our Product Introduction

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Product Description

785nm Laser Deep Cooling Wide Spectral Range Laboratory Online Process Raman Analyzer

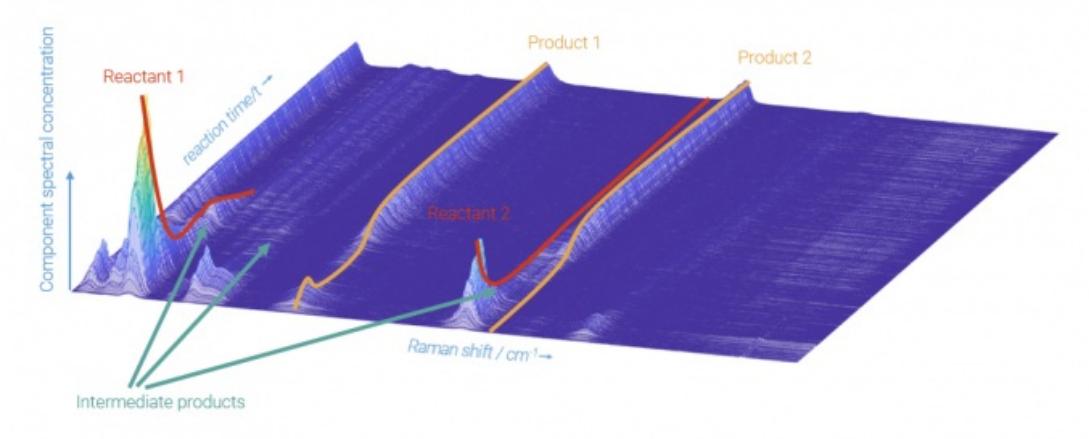
Product Description:

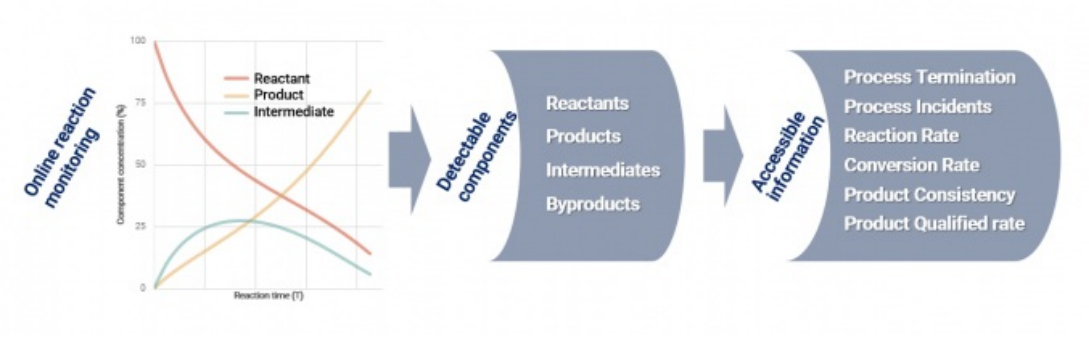
Chemical/pharmaceutical/materials process development and production requires quantitative analysis of components. Usually, offline laboratory analysis techniques are used, where samples are taken to the laboratory, and instruments such as chromatography, mass spectrometry, and nuclear magnetic resonance spectroscopy are used to give information on the content of each component. The long detection time and low sampling frequency cannot meet many real-time monitoring needs.

JINSP provides online monitoring solutions for chemical, pharmaceutical, and material process research and production. It enables in-situ, real-time, continuous, and rapid online monitoring of the content of each component in reactions.

JINSP RS2000 has been used in the field of fine chemicals for reaction mechanism, kinetics, crystal form research, process development and optimization. In particular, it is applicable to dangerous processes such as nitration, chlorination, fluorination, hydrogenation, and diazotization.

RS2000 has also been used in the field of biomedicine, including such biological processes as aseptic biological fermentation, peptide drug synthesis, enzyme catalytic reaction, etc. to control processes accurately.





Features:

● Utilizing specially engineered Raman probes, these devices are capable of enduring and functioning reliably within extreme reaction environments characterized by the presence of strong acids, strong bases, highly corrosive substances, elevated temperatures, and high pressures. These probes are designed to maintain their integrity and performance under such harsh conditions, ensuring accurate and reliable measurements without being compromised by the aggressive nature of the chemical reactions they are monitoring.

● These advanced Raman probes offer the capability of providing real-time responses within mere seconds, eliminating the need for any waiting period. This rapid analysis allows for the immediate provision of results, enabling researchers and operators to make timely decisions based on the data obtained. The speed of these probes is a significant advantage in dynamic and fast-paced experimental setups, where immediate feedback is crucial for the progression of the work.

● A notable feature of these Raman probes is their ability to perform measurements without the necessity of sampling or undergoing any sample processing. This in-situ monitoring technique ensures that the reaction system remains undisturbed and unaffected by external manipulation. By not requiring the removal of samples from the reaction vessel, the probes provide a non-invasive method of analysis, which is particularly beneficial in maintaining the integrity and consistency of the reaction conditions.

● The continuous monitoring capability of these Raman probes allows for the swift determination of the reaction endpoint, which is crucial for optimizing reaction times and yields. Additionally, these probes are equipped with alert systems that can detect any anomalies or deviations from the expected reaction profile. This feature is invaluable for ensuring the safety and efficiency of chemical processes, as it enables prompt intervention in case of any unexpected occurrences, thereby preventing potential hazards and ensuring the smooth progression of the reaction.

Can withstand extreme reaction conditions such as strong acid, strong alkali, strong corrosiveness, high temperature, and high pressure

Real-time response in seconds, no need to wait, providing analysis results promptly.

No sampling or sample processing required, in-situ monitoring without interference to the reaction system.

Continuous monitoring to quickly determine the reaction endpoint and alert for any anomalies.

Technical Parameters:

Technical Parameter	**Value**
Product	Online Raman Analyzer
Measurement Type	Raman Spectrometer
Laser wavelength	785nm
Wavelength accuracy	0.2 nm
Wavelength stability	0.01 nm
Sample Type	Liquid
Number of detection channels	1 single channel
Standard Probe	1pc 1.3 m non-immersed fiber optic probe (PR100) and 1pc 5 m immersed probe (PR200-HSGL)
Software functions	1. Online Monitoring: Continuous real-time collection of single-channel signals, providing real-time substance content and trend changes, enabling intelligent analysis of unknown components during the reaction process; 2. Data Analysis: Capable of processing data through smoothing, peak finding, noise reduction, baseline subtraction, difference spectra, etc; 3. Model Establishment: establishes a quantitative model using known content samples and automatically builds a quantitative model based on real-time data collected during the reaction process.
Dimensions	375x360x185mm
Net Weight	≤10 kg

Certifications	CE ISO9001

Applications:

Li-ion battery industry
Research on the synthesis process of bis(fluorosulfonyl)amide

Biopharmaceutical industry
Drug crystal form research and consistency evaluation
Quality Control in Biofermentation Engineering

Fine chemical industry
Research on the process of producing furfuryl alcohol by hydrogenation reaction of furfural
Process control of bioenzyme catalytic reactions of nitrile compounds
A certain ultra-low temperature nitrification reaction
Research on o-xylene nitration reaction process

1.Analysis of Chemical Reactions/Biological Processes under extreme conditions

Under conditions of strong acids, strong alkalis, high temperature, high pressure, strong corrosion, and toxicity, conventional instrument analysis methods may face challenges in sampling or cannot withstand active active samples. However, online monitoring optical probes, specially designed to adapt to extreme reaction environments, stand out as the sole solution.
Typical Users: Researchers involved in extreme chemical reactions at new material companies, chemical enterprises, and research institutes.

2.Research and Analysis on Intermediate Reaction Components/Unstabl

Short-lived and unstable reaction intermediates undergo rapid post-sampling changes, making offline detection inadequate for such components. In contrast, real-time, in-situ monitoring through online analysis has no impact on the reaction system and can effectively capture changes in intermediates and unstable components.
Typical Users: Experts and scholars from universities and research

institutes interested in the study of reaction intermediates.

3.Time-Critical Research and Development in Chemical/Bio-processes

In research and development with tight timelines, emphasizing time costs in chemical and bioprocess development, online monitoring provides real-time and continuous data results. It promptly reveals reaction mechanisms, and big data assists R&D personnel in understanding the reaction process, significantly accelerating the development cycle.Traditional offline detection provides limited information with delayed results, leading to lower R&D efficiency.

Typical Users: Process development professionals in pharmaceutical and biopharmaceutical companies; R&D personnel in new materials and chemical industries.

4.Timely Intervention in Chemical Reactions /Biological Processes with Reaction Anomalies or Endpoints

In chemical reactions and biological processes such as biofermentation and enzyme-catalyzed reactions, the activity of cells and enzymes is susceptible to the influence of relevant components in the system. Therefore, real-time monitoring of abnormal concentrations of these components and timely intervention are crucial for maintaining efficient reactions. Online monitoring provides real-time information about the components, while offline detection, due to delayed results and limited sampling frequency, may miss the intervention time window, leading to reaction anomalies. Typical Users: Research and production personnel in

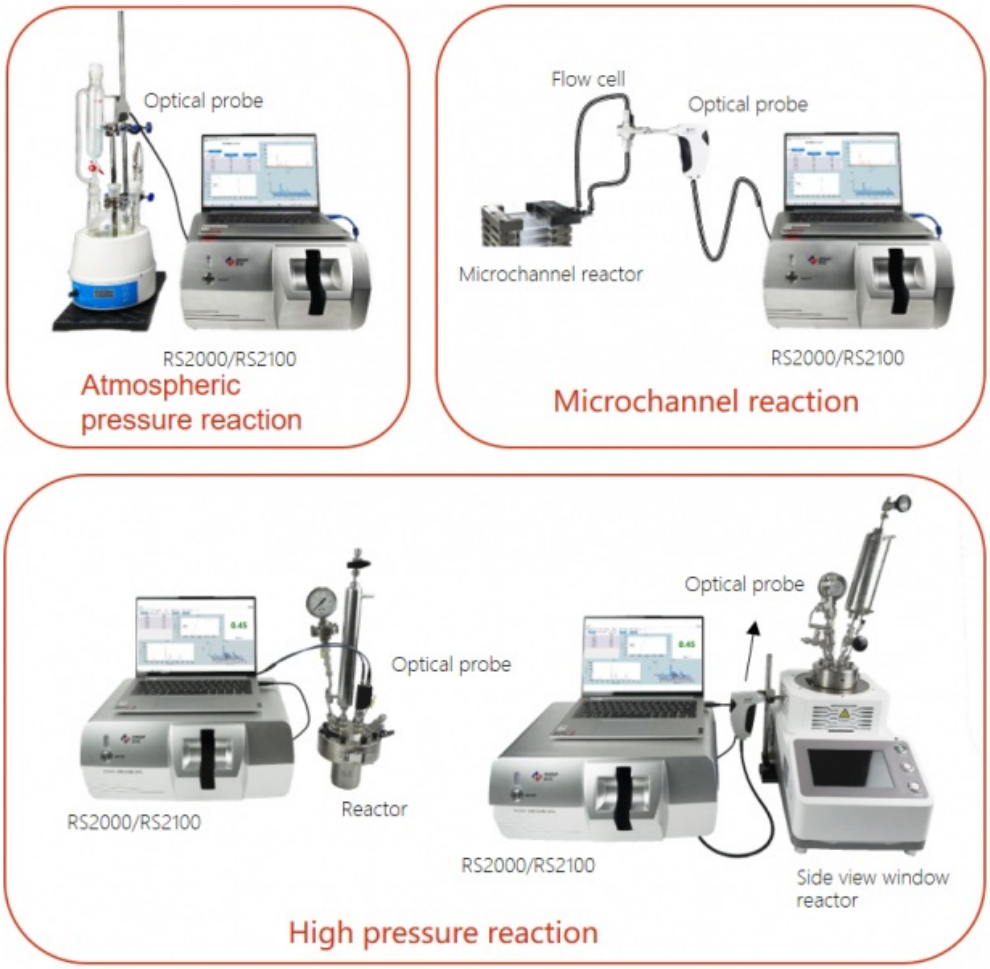
biofermentation companies, pharmaceutical/chemical companies involved in enzyme-catalyzed reactions, and enterprises engaged in the research and synthesis of peptides and protein drugs.

5.Product quality/Consistency Control in Large-Scale Production

In the large-scale production of chemical and biological processes, ensuring the consistency of product quality requires batch-by-batch or real-time analysis and testing of reaction products. Online monitoring technology, with its advantages of speed and continuity, can automate quality control for 100% of batch products. In contrast, offline detection technology, due to its complex processes and delayed results, often relies on sampling, posing quality risks for products not sampled.
Typical Users: Process production personnel in pharmaceutical and biopharmaceutical companies; production personnel in new materials and chemical companies.

Usage models:

RS2000 has three usage modes in the laboratory, and each mode requires different accessories.
1. The first mode uses an immersed long probe that goes deep down to the liquid level of the reaction system to monitor each reaction component. Depending on the reaction vessel, reaction conditions, and system, different specifications of probes are configured.
2. The second mode involves using a flow cell to connect a bypass probe for online monitoring, which is suitable for reactors like microchannel reactors. Various probes are configured based on the specific reaction vessel and conditions.
3. The third mode utilizes an optical probe directly aligned with the side window of the reaction vessel for reaction monitoring.



FAQ:

Q1: This is the first time I use it, is it easy to operate?
A1:We will send you a manual and guide video in English, it can teach you how to operate the spectrometer. Also, our technicians will offer professional technical operation meetings.

Q2: Can you offer an operation training?
A2: Your technicians can come to our factory for training. Jinsp engineers can go to your place for local support (installation, training, debugging, maintenance).

Q3: How to receive the best price in the shortest time?
A3: When you send us an inquiry, please kindly offer details with wavelength,detector, effective pixels, focal length, and so on. We will send you a quotation with details soon to your email.

Q4:If the spectrometer has a problem in my place, what could I do?
A4: The spectrometer has a one-year warranty. If it breaks down, our technician will figure out what the problem maybe, according to the client's feedback. We can repair for free within one year warranty.

Q5: What about quality assurance?
A5:We have a quality inspection team. All goods will go through quality inspection before shipment. We can send you pictures for inspection.

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