

Lab Online Process Raman Spectroscopy Instruments High Accuracy Multi Channels

Our Product Introduction

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Basic Information

- Place of Origin: CHINA
- Brand Name: JINSP
- Certification: CE ISO9001
- Model Number: RS2000-4
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: International Shipping Package
- Delivery Time: 60-80 working days
- Payment Terms: T/T
- Supply Ability: 100PCS Per Month



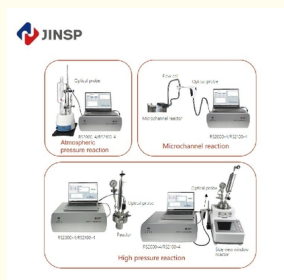
Product Specification

- Laser Wavelength: 785nm
- Wavelength Accuracy: 0.2nm
- Wavelength Stability: 0.01nm
- Output Data Format: Spc Standard Spectrum, Prn, Txt And Other Formats Are Optional
- Communication Protocols: Modbus
- Connectivity: USB 2.0
- Power Supply: 100 ~ 240 VAC, 50 ~ 60 Hz
- Detection Accuracy: 0.5%
- Highlight: **High Accuracy Online Raman Spectroscopy Instruments**



Multi Channels Online Raman Spectroscopy Instruments
, Lab Online Raman Spectroscopy Instruments

More Images



Product Description

RS2000-4 Four Multi-channel Online Process Raman analyzer

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 RS2000A-4 is designed with a 4-channel optical probe for switching online analysis in multiple reaction systems, achieving simultaneous process control for multiple systems.

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.

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	four-channel switching detection
Standard Probe	1pc 1.3 m non-immersed fiber optic probe (PR100)
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.
Power supply	100 ~ 240 VAC ,50 ~ 60 Hz
Operating temperature	0 ~ 40
Dimensions	496x312x185mm
N. Weight	≤10 kg

Technical highlights:

The advantages of utilizing JINSP's online analytical instrument are manifold and significant, offering a range of benefits that can greatly enhance industrial processes and outcomes. Firstly, this innovative technology is designed to significantly shorten the duration of process development, thereby accelerating the time-to-market for new products. By providing real-time data and insights, it allows for a more efficient and streamlined development process, ensuring that products can be brought to market more quickly than ever before.

Moreover, the implementation of JINSP's online analytical instrument can lead to a substantial enhancement in production efficiency and capacity. By enabling continuous monitoring and analysis of the production process, it allows for the optimization of various parameters, resulting in higher output rates and improved utilization of resources. This not only boosts overall productivity but also ensures that manufacturing processes are running at their peak performance levels.

Another critical benefit is the instrument's ability to enable timely intervention in controlling the reaction process. By providing precise and immediate feedback on the state of ongoing reactions, it allows operators to make informed decisions and adjustments in real-time. This capability is crucial in preventing deviations and ensuring that processes remain within the desired parameters, ultimately leading to more consistent and reliable outcomes.

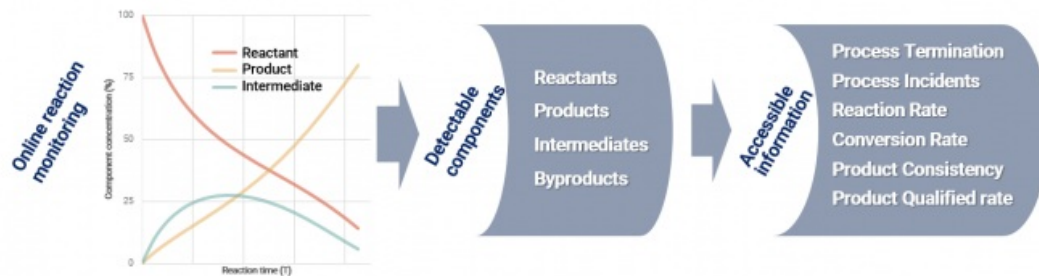
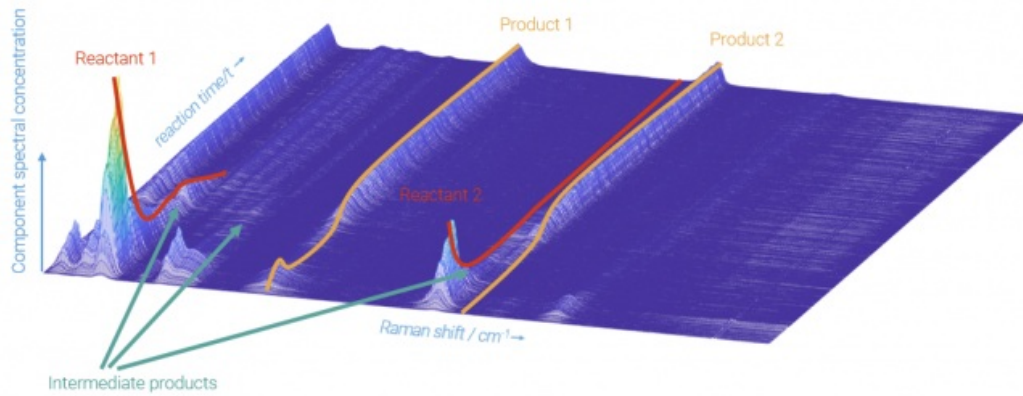
In addition, the use of JINSP's online analytical instrument can lead to a reduction in product defect rates, thereby minimizing losses associated with substandard products. By continuously monitoring the quality of the output, it allows for the early detection of any issues, enabling corrective actions to be taken before significant quantities of defective products are produced. This not only saves on material costs but also helps maintain the integrity and reputation of the brand.

Furthermore, the instrument is equipped with the capability to provide alarms for abnormal reactions. This feature is essential for ensuring the safety and stability of the production process. By alerting operators to any deviations or anomalies, it allows for prompt responses to potential issues, preventing accidents and minimizing the risk of hazardous situations.

Lastly, the online analytical instrument helps to avoid dangerous on-site sampling. Traditional methods often require personnel to physically collect samples from the production environment, which can expose them to various risks, including chemical

hazards and extreme conditions. By eliminating the need for such manual sampling, the instrument not only protects the workforce but also ensures a more consistent and uninterrupted production process.

In summary, JINSP's online analytical instrument offers a comprehensive suite of benefits that can transform industrial processes. From accelerating product development and enhancing production efficiency to ensuring quality control and safety, this technology is a valuable asset for any modern manufacturing operation.

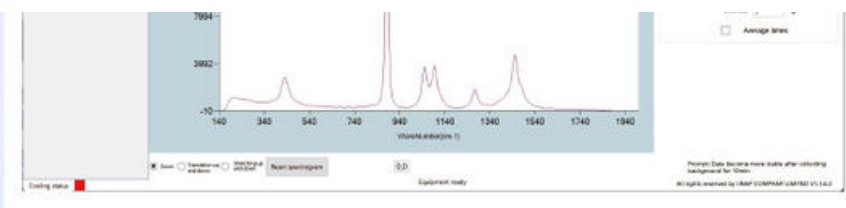


Software Interface

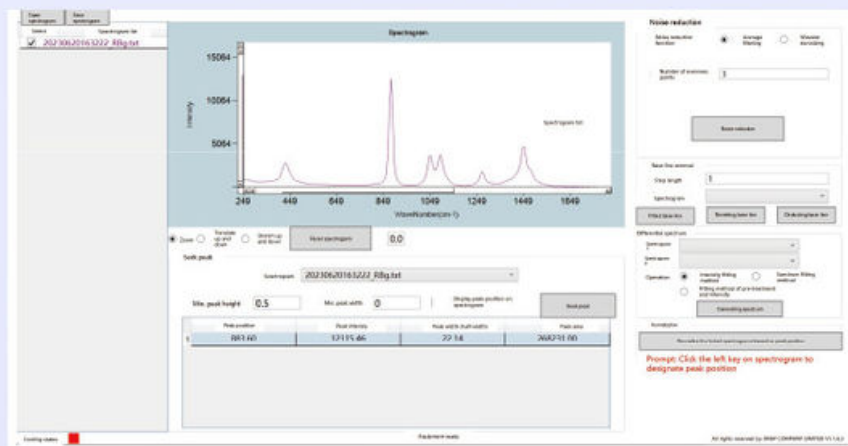


Online Monitoring

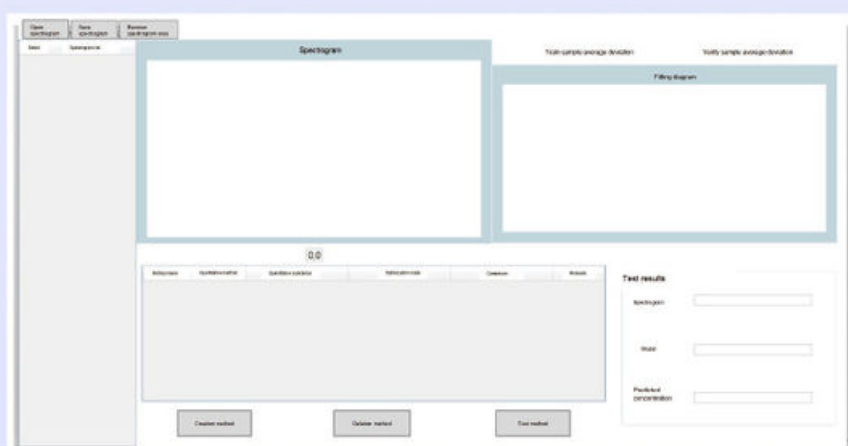




Data Acquisition



Data Analysis



Method Research

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

Eg: 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 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.

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



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active samples. However, online monitoring optical probes, specially designed to adapt to extreme reaction environments, stand out as the sole solution.

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2. Research and Analysis on Intermediate Reaction Components/Unstable



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

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.

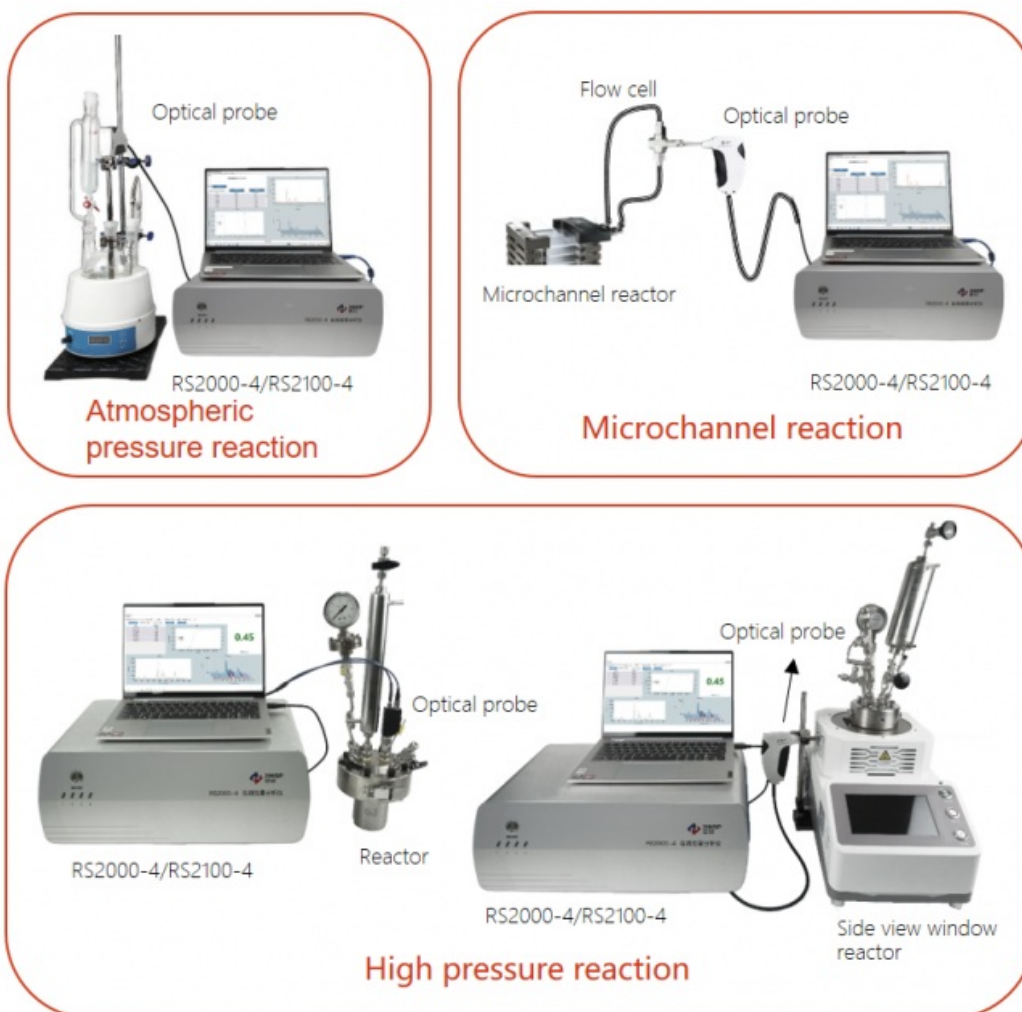
Usage models:

RS2000A-4 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.



Company Introduction:

JINSP Company Limited has won the National Science and Technology Commission's Scientific and Technological Achievement Appraisal Certificate and the China Patent Excellence Award, and related products have been obtained has won authoritative awards such as the Geneva International Invention Award, the Beijing New Technology and New Product Certificate, and the "Innovation Achievement Award" of the Zhu Liangyi Analytical Instrument Innovation Award.

In addition, JINSP participated in the drafting of several national and international standards, including participating in the drafting of an international standard as the only participating unit in China IEC 63085 International Standard: System of spectral identification of liquids in transparent or semitransparent containers; Drafting of two national standards: GB/T 41086-

Company Profile



Exhibition



Certifications



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 may be, 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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