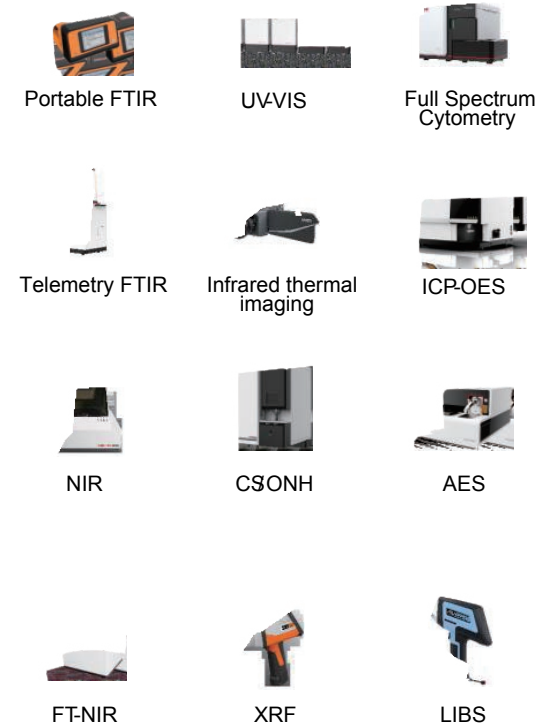


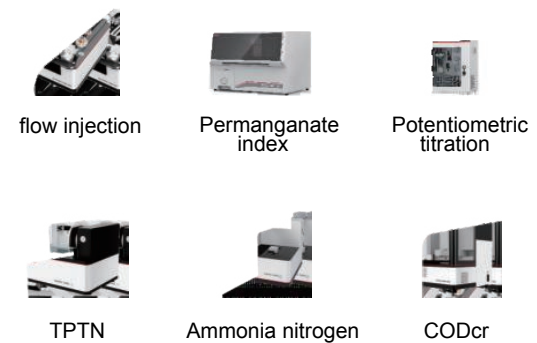
Chromatography-mass spectrometry



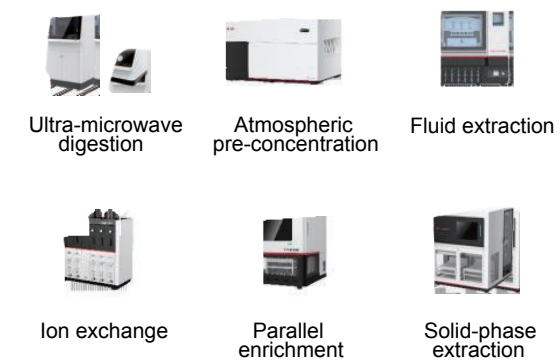
Spectrometry



Physical & chemical



Pre-treatment



EXPEC 5231 GC-MS/MS

Gas Chromatography-Triple Quadrupole Mass Spectrometer

For more information visit our website at www.fpi-inc.com/en

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FPI Impression

Focused Photonics Inc. is a well-established publicly-traded company with over 6000 employees worldwide. FPI group's business scope includes environmental and process analytics, scientific instruments, consulting, and engineering projects. The primary focus of FPI is R&D, manufacturing, and sales of high-tech analytical devices and instruments, as well as the development of innovative tailor-made applications.

EXPEC 5231 GC-MS/MS

EXPEC-5231 is a brand new gas chromatography-triple quadrupole mass spectrometer (GC-MS/MS) which was self developed by FPI based on the intellectual property rights of a series of innovative mass spectrometry technologies. EXPEC-5231 GC-MS/MS adopts the gas chromatograph technology and mass spectrometer interface without cold point in the whole process and the design of EI ion source to ensure efficient and stable sample transmission and ionization efficiency.

EXPEC-5231 GC-MS/MS has excellent anti-pollution ability and outstanding scalability. It is suitable for the application of traditional Chinese medicine, agricultural residues, food safety, environmental monitoring and so on. Mass spectrometry workstation software developed for customers' needs and usage habits includes professional mass spectrometry control and quantitative analysis software, and combines with standard method library, intelligent batch processing and customized report output functions, which reduces the operation difficulty of mass spectrometry software system greatly. At the same time, it also has a rich application method library to meet the application needs of more mass spectrometry users.



Ion Source EI

- Adopt the gas chromatography/mass spectrometer interface without cold point in the whole process and the design of EI ion source to ensure efficient sample transmission and ionization efficiency.



Tandem QQQ Quality Analyzer

- Adopting design of tandem quadrupole mass spectrometers and hexapole collision cell.
- The stable dual mass analyzer can carry out various mass analysis scans and is suitable for various mass spectrometry research work.
- Efficient collision cell for maximum ion transport.
- Including full scan, SIM, SRM, product ion scan, precursor ion scan, neutral loss scan and MRM.



Excellent Stability

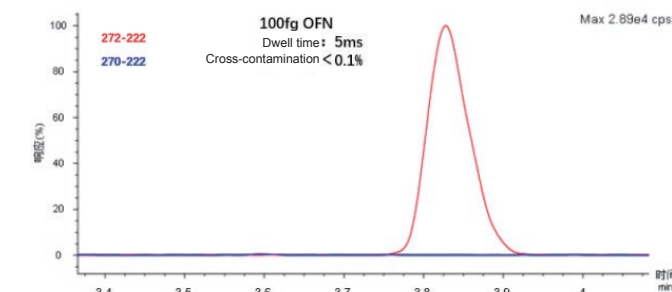
- The patented closed-loop adaptive adjustment technology of dual-channel RF power supply improves the stability of quadrupole RF power supply.
- The patented anti temperature and humidity alternating technology is suitable for a wider range of temperature and humidity applications .

Excellent Sensitivity

- High ionization efficiency and ion transport efficiency.
- The innovative technology of axial acceleration collision cell improves the collision efficiency greatly.
- The patented technology of pulse counting detector can detect ion signals without loss and filter noise interference effectively.

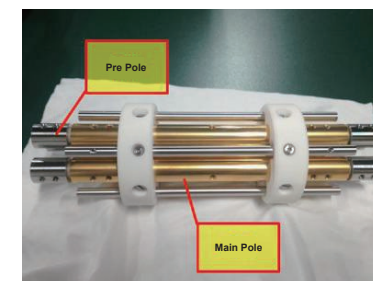
Collision Cell with Axial Acceleration

- Improve scanning speed.
- Improve collision efficiency.
- Eliminate crosstalk between ion pairs and no memory effect.



Pure Molybdenum Quadrupole Mass Spectrometers

- Pure molybdenum quadrupole has the best stability to ensure the stability of the quality axis.
- Gold plating on the surface and inert treatment to eliminate organic deposition.



Intelligent MRM

- The intelligent MRM function provides users with the convenience of method editing and modification.
- Be able to analyze more target compounds in a single run for more efficient use of instrument analysis time and increased sample throughput.

Mass Expert mass spectrometry workstation

- Mass Expert mass spectrometry, the control and analysis software developed for customers' needs and usage habits, are simple to operate. The function of one-click automatic tuning and quality calibration reduces the complexity of instrument control and the threshold of instrument use. Mass spectrometry analysis software and report template can be customized according to different application fields and different users to meet the use needs of various application fields.

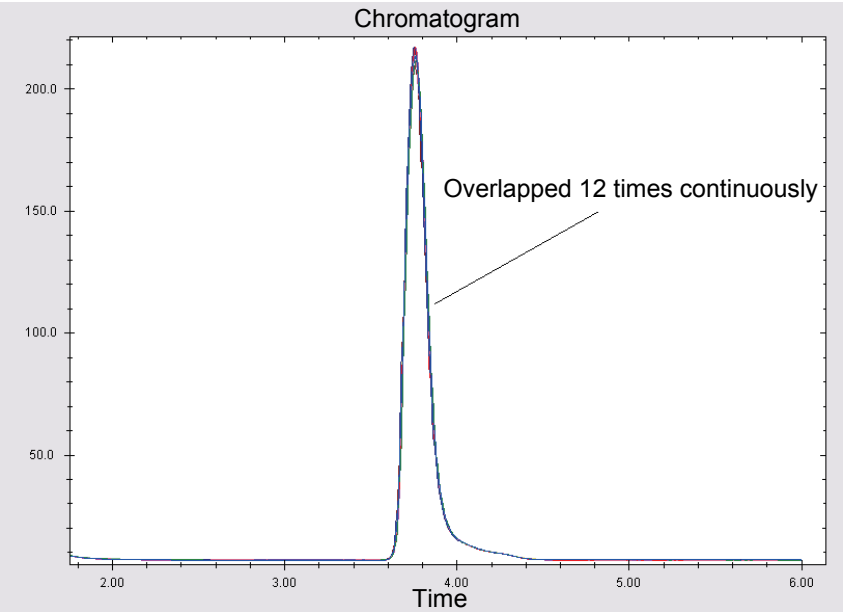
EXPEC 5231 GC-MS/MS is equipped with GC2000 gas chromatograph, which adopts advanced electronic flow control system, microfluidic plate control technology, high-precision independent temperature control system and highsensitivity detector, with flexible and user-friendly interface, high-speed sampling frequency and signal processing speed, meeting the user's requirements for instrument analysis capability, reliability, stability and advancement

Intelligent instrument control

- The host monitoring software is developed based on the intelligent system of the micro-kernel processing architecture. It is equipped with an 8-inch full-fit high-resolution capacitive touch screen and an image UI, combined with intelligent functions such as self-diagnosis reminder, self-detection of leakage, and self-saving of carrier gas, reducing the difficulty of use and maintenance, and easily grasp the status of the instrument.
- The system innovatively adopts a multi-core collaborative processing architecture, and task instructions are automatically allocated according to the current load of each micro-core, which greatly improves the response time, execution efficiency and stability of processing tasks, ensuring that the software still operates smoothly after long-term operation.
- The software follows the simple and easy-to-use design concept, retains the necessary system parameter monitoring and setting, and simplifies various unnecessary complex settings through intelligent one-key operation. At the same time, the simple and refreshing,monitoring and parameter setting interface adopt a combination of quasi-materialization and flattening and modular design,and at the same time easy to operate.

Excellent Chromatographic Stability

The whole flow path of the machine adopts a new generation of high-precision electronic pressure/flow control, with automatic atmospheric pressure and temperature compensation. The highest control accuracy can reach 0.01kPa, with reliable inlet and column oven temperature control module, ensuring that the system has an excellent analysis reproducibility. In addition, in some specific applications, the target analyte has a high boiling point and strong adsorption, and can be equipped with a fully inert pipeline to ensure the excellent reproducibility of the system.



Dwell Time Lock

- Excellent GC analytical techniques require consistent dwell time. With the new generation of high precision electronic pressure/flow control, reliable column oven temperature control module and convenient analysis workstation, in the case of cutting and long-term use of chromatographic column efficiency changes, the dwell time can be locked in one injection, reducing repetitive editing of MS methods by experimenters and easily obtain high-quality gas phase data.
- Consistent dwell time can be obtained on the same GC or GC-MS system, or even multiple GC and GC/MS systems.



Post-column Backflush Technology

- The backflushing flow path is precisely controlled by auxiliary EPC, without dead volume.
- Reduce contamination by backflushing the matrix of high molecular weight compounds through split flow to avoid entering the detector; and reduce the accumulation of high boilers in the column.
- Faster cycle times, backflushing away high molecular weight compounds, reducing chromatographic run time and column temperature.
- Longer column life and reducing detector maintenance.
- Improve data quality and get better analytical results.

Autosampler

• Liquid Injection

Whether standard injections, fast injections, sandwich injections or large volume injections of up to 1000 µl of liquid samples, GC2000 provide highly reliable and efficient operations, allowing you to easily have stable and reproducible analyses result and no cross-contamination or analyte discrimination. The maximum 110-position autosampler is optional, and there is no need for personnel to be on duty during high-throughput injection.

• Headspace injection

The software's overlapping sample preparation function allows pre-processing such as preheating of multiple samples and analysis of GC to be carried out simultaneously to maximize the utilization of the equipment. The headspace needle is constantly heated and continuously cleaned by carrier gas purge during the process to prevent cross-contamination.

• Solid Phase Microextraction (SPME)

All steps required for SPME analysis can be fully automated, including fiber tip aging, sample extraction, fiber tip analysis, and fiber tip replacement. Derivatization can be performed directly on the fiber tip or by adding derivatization reagents to the sample prior to extraction. The mechanical stress on the extraction head is greatly reduced, increasing its service life and increasing the uptime of the instrument.

• Dynamic Headspace (Purge and Trap DHS)

Compared with static headspace, dynamic headspace greatly improves the detection limit, and retains the characteristics of good reproducibility and easy operation of static headspace. Solid sample viscous material and liquid sample headspace are blown away by inert gas, and volatile substances are transferred to replaceable adsorption wells for enrichment, and the entire process is automated GC/MS analysis.

Applications

Environmental Monitoring

Monitoring and Analysis of Environmental Pollutants



Food Safety

Detection of food additives, food residues, contaminants, illegal additives



Biomedicine

Detection of Chinese herbal medicines, synthetic APIs, proprietary Chinese medicines, and synthetic drugs



Forensic and Toxicology

Detection of illegal drugs and poison



