

Multiplelabs

Turnkey Laboratories Solutions

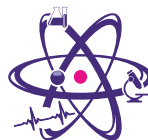
ICP-MS 3200

Inductively Coupled Plasma Mass Spectrometry

Inductively Coupled Plasma Mass Spectrometry

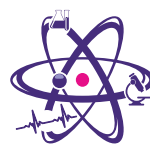
- Cost-effective.
- Satisfy the client's requirements
- Quick analysis speed





TO BE A WORLD-LEADING ANALYTICAL TESTING SOLUTIONS PROVIDER !

- Inletsystem:It has open-type inlet stem structure, outside installing atomizer which location by itself and need not be adjusted
- Peristaltic pump:The Low Pulse peristaltic pump. Computer controlled 4 channels and 12 rollers with adjustable rotate speed
- Atomizer: quartz glass concentric atomizer. (0.8 mL/mm)
- Atomizing chamber:The high-purity quartz atomizing chamber which use semiconductor refrigerating plant is a small size, short memory effect, single channel, pear shape, Impact bead possessed atomizing chambe
- Torch tube:The quartz torch tube has 2.5 mm caliber to spray
- Plasma RF Generator:Computer controlled RF generator operated at 27 MHz/40MHz. Additionally, suitable from 500 to 1600 watts for automatic control and torch ignition, efficient and superior ionization.
- ICP source:27.12 MHz Solid State Technology, water-cooling, power 1600W controlled by computer, lire up automatically
- Adjustment system of torch tube position: The computer controls x y z three-dimensional accurate position.
- Spray chamber: Temperature controlled of cyclonic quartz with peltier cooling
- Control system of gases:4 mass flow meters controlled by computer (gas flow atomization gas, Aux gas, plasma gas)
- Power-off protection system:when power off, it can shut down by it self with no damage the instrument system
- Connector:Platinum Cone special event connector,structure, easy to replace, install, demo, sampling and skimmer cone
- Activities valve:It is a computer control valv protected instrument vacuum convenient for installing and dismantling sampling cone and skimmer cone when the vacuum system working
- Ion lens system: High efficiency hexapole ion guiding system. In all the mass range, it can get the best ion transmission efficiency. It has Ions deflection system. Lens installation and easy removal
- Quadrupoles characteristic:Mo Quadrupole, main Quadrupole 180 mmx 12 mm, head Quadrupole 20 mmx 12 mm, uncover to installing and dismantling
- Quadrupoles RF generator:air patenting, solid state, 2.0 MHz, mass number adjust stability <0.05 amu/day
- Mass spectra range:2-260 amu
- EMT detector (dynode type) with analogue and pulse ion counting mode/digital mode with ≥ 11 orders of magnitude.
- Test rarge:>10
- Multichannel signal analyzer:65000 channels to adapt to the requirements of the transient signal analysis
- Signal acquisition mode:Jump peak, scanning, sectional scanning, at the same time jump peak and scanning of mixed type
- Software:To provide automatic control instruments and their accessories ability, Windows 2000 IXP/ vista / win7(32 bit or 64 bit)
- Professional operating system
- Water circulation system: Temperature control: 10- 60°C; n Minimum velocity: 5L/Min, Pressure



▶▶ Introduction:

Inductively Coupled Plasma Mass Spectrometry (ICP-MS), has a microscale (10^{-6}) trace (10^{-9}) ultra-trace (10^{-12}) element analyses technique. It can analyse most of the elements in the periodic table. It has very low detection limit, wide trends linearity range, low interference, high accuracy, high analyzed speed, and it also can analyze isotope.



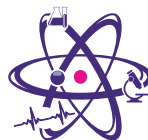
ICP- MS3200 is the first inductively plasma mass spectrometer in india. It's performance accord with national standard. It can satisfy the clientele requirements and has high performance-price ratio. It mainly applies to environmental foodstuL semi conductor medicine and physiological analysis nuke industry etc.

▶▶ Instrument Features:

- Open-type inlet system, plug-in installing atomizer, self positioning, maintain easily by customer.
- The network interface for serial inductance, enhanced resistance to interference, improve the data transmission efficiency and stability
- Very kinds of protect function
- The software is easy operated. No special training
- The ion lens, Quadrupole are easily installing, dismantling and maintain
- Perfectly technique of electromagnetic shielding can reduce electromagnetic interference (EMI)
- High grade sale service, IOminutes responds 48hours door-to-door services customer service center follow-up service at all times ensure service quality

▶▶ Product Performance Superiority:

- Quick analyse speeds simple operate high sensitivity% low background noise good effect of eliminating interferences easy maintain
- OneClick plasma setting made plasma optimizing more convenient and excellent reproducibility
- Advanced plasma shielding Technology greatly improve the instrument response rate and limit of low mass number, achieve ppt level
- It has particular Activity connector structure which can be replaceable sampling cone and skimmer cone install in empty space, it's convenient for daily maintenance
- The Ion efficiency of transmission and eliminate interference capability of polyatomic ion is improved by using the hexapole collision cell
- It doesn't need Digital/Analogue Conversion , controlled by computer and can achieve consistence dynamic range to 9 order of magnitude(10^9 cps)
- The new type Vacuum Chambers structure has no wire to connect, Each module use dissymmetric(al) and plug-in installing

**►► Main Apply Field:**

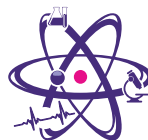
- Environment field: drinking water. seawater. environment water resource foodstuffs hygiene and disease control commodity inspection etc
- Semiconductor field: high pure metal, high purity reagent. ultratrace impurity of Si wafer, photoresist etc
- Medicine and physiological analysis field: Medical Research of hairs whole blood serum urine sample biological organization etc. Especially the test of Pb in whole blood
- Nuclear industry field: analysis of nuclear fuel radio isotope, pollution of Primary cooling water etc
- Other field: as chemical industry lithification geology etc

►► Technical Parameters:

- Mass range: 2-260 amu
- Linear range: $\geq 10^8$
- Sensitivity: $\geq 2 \times 10^6$; $\ln \geq 35 \times 10^6$; $U \geq 30 \times 10^6$ unit (cps/mg/L)
- Detection limit: Be (9) - <0.5, In (115) - <0.1, Bi(209) - <0.1 unit (ppt)
- Resolution: 0.3 - 0.6 amu
- SNR (Signal to Noise Ratio): $\geq 50 \times 10^6$
- Background noise: 1 cps (all mass number range)
- Mass axis stability: 0.05 amu/24 h
- Stability RSD: short period $\leq 2\%$; long time 3%
- Oxide ion: CeO^+/Ce^+ 3%
- Divalent ions: 69 Ba²⁺/138 Ba 3%
- Isotope ratio: (107 Ag / 109Ag) 0.3%
- Abundance sensitivity: 5×10^{-7} low mass number; 1×10^{-7} high mass number
- No gas mode sensitivity: Li (7) - 50, Co (59) - 100, U(238) - 300 unit (Kcps/ppm)
- Dwell time: 3ms
- Scan speed: 3000 amu/s
- Oxide ratio represented by CeO^+/Ce^+ : < 2%
- Doubly charged ratio : $\text{Ba}^{2+}/\text{B}(\%)$ 3% or better (Specify)
- Isotope ratio precision : $\text{Ag}^{107}/\text{Ag}^{109}$ < 0.1% or better

►► Software Advantage:

ICP-MS 3200 provides the most convenient operating software, very intuitive, comprehensive. The software contains all current analysis methods, including a special isotope ratio and isotope dilution method. Intelligent selection method, intelligent instrument tuning, QC, various analysis methods combination function, sequence analysis, the function of automatic monitoring, custom report format.



▶▶ Sample Introduction System:

- System is capable of analyzing samples with TDS from 0.2 to > 20% with software-controlled, variable flow, >10 fold, Aerosol/Argon dilution accessory.
- Nebulisers:
 - * MicroMist Glass concentric nebulizer.
 - * Cross/Micro flow/PFA nebulizer for HF medium.
 - * Direct Inject nebulizer.
 - * Meinhard nebulizer.
- Spray Chambers: Temperature range from -10 °C
 - * Quartz Scott-type.
 - * PFA Spray chamber for HF medium.
 - * Standard cyclonic type suitable for different kind of samples.
- Nuke industry field: analysis of nuclear fuel radio isotope, pollution of Primary cooling water etc
- Other field: as chemical industry lithification geology etc

▶▶ Injectors:

- Alumina/quartz/PFA injectors suitable for HF medium and other sample environments
- Sample introduction system and assemble easy accessible for maintenance
- Auto sampler: 200 sample capacity.

▶▶ Plasma Ion Source

Digital programmable plasma generator, with auto tuning

Plasma Gas Control

- Four Active Mass Flow Controllers (AMFC/PFC) for Control plasma, auxillary, makeup and Carrier Gases.

▶▶ Vacuum System:

- Four stage vacuum system (12 rollers, split flow turbo molecular pump, turbo pump, external rotary pump, turbo pump backing)
- Vacuum systems to maintain required pressure levels between the source and analyzer.
- Single floor mounted remotely located rotary pump that reduces noise level in the room.
- Turbo molecular pumps for cleaner and faster vacuum for prevention of damage by reactive gases
- Vacuum: minimum 10-5 mbar

▶▶ Cell technology:

- Standard mode, Collision Cell Mode with Kinetic Energy Discrimination (KED) and reaction cell.
- Separate gas line for collision and reaction gas with MFC for He, H₂, NH₃, O₂ and other gases like CH₄, C₂H₂, CH₃F, C₂H₆ etc.