

# NO INTERFERENCE BETWEEN YOU AND GREAT DETECTION

## Introducing the multi-quadrupole NexION 5000 ICP-MS – ideal for semiconductor materials.

In the process-driven analytical world of semiconductor device and chemical manufacturers, controlling trace-elemental impurities is critical to performance. This requirement is driving suppliers to deliver ultraclean materials and creating a demand for instrumentation that guarantees superior interference removal with exceptional background equivalent concentrations (BECs).

That's the thinking behind the NexION® 5000, the industry's first multi-quadrupole ICP-MS instrument. This cutting-edge system delivers performance beyond high-resolution ICP-MS and traditional triple quad technology, with:

### Superior Interference Removal

In this four-quadrupole system, the ion beam is shaped and directed within Q0 (Quadrupole Ion Deflector) and filtered in Q1 (first Transmission Analyzer Quadrupole). The reaction is controlled in Q2 (Quadrupole Universal Cell), and the resulting ions are separated in Q3 (second Transmission Analyzer Quadrupole). This multi-quadrupole setup, in combination with triple quad technology, allows the system to deliver less than 1 ppt BECs in hot plasma.

### Excellent Stability

Our free-running 34-MHz RF generator delivers fast impedance matching to rapidly adjust to changing sample matrices, while the wide-aperture cones of the Triple Cone Interface offer unparalleled resistance to clogging. And you can use pure gases, such as pure  $\text{NH}_3$ , for predictable and reproducible reactions.



### Unmatched Matrix Tolerance

The NexION 5000 ICP-MS is perfect for laboratories that need low detection limits and BECs in a variety of different matrices, from aqueous to organic, from ultrapure water (UPW) to photoresist solutions.

### Lowest Maintenance

In the semiconductor industry, uptime is key to keeping your lab running at peak performance. That's why our NexION 5000 system eliminates virtually all maintenance requirements, for unsurpassed instrument uptime.

## Nothing Interferes with Accuracy

The cutting-edge NexION 5000 ICP-MS combines the simplicity of a reaction/collision cell with multi-quadrupole technology that transcends traditional triple quad – perfect for the semiconductor industry. That's because the NexION 5000 ICP-MS can obtain BECs below 1 ppt for semiconductor-essential elements (SEMI F63-0918) in hot plasma conditions due to more efficient removal of spectral interferences thanks to the Universal Cell's dynamic bandpass tuning capability. And it's also easily upgradable to meet SEMI S2 and S8 standards.

### ■ Quadrupole Ion Deflector (Q0)

Transmits a select mass range of interest, reducing stray and matrix ion loading onto the first transmission quadrupole while eliminating photons and neutrals from the ion beam.

### ■ Transmission Analyzer Quadrupole (Q1)

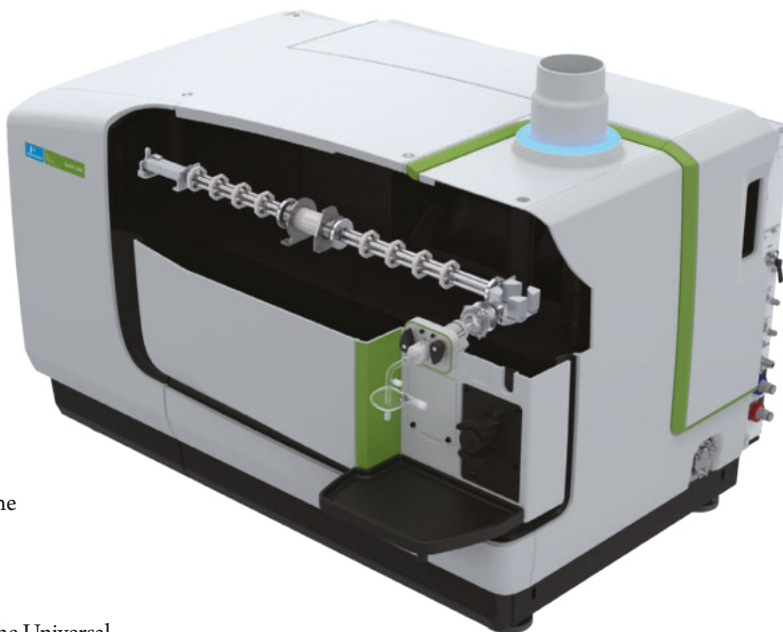
Filters the ion beam for subunit mass resolution, ensuring a clean beam of ions of the same nominal mass enters the cell with custom resolution down to less than 0.3 amu.

### ■ Quadrupole Universal Cell (Q2)

Controls gas-phase reactions by providing an additional stage of mass separation, maximizing the efficiency and specificity of interference removal.

### ■ Transmission Analyzer Quadrupole (Q3)

Used for subunit mass separation of ions exiting the Universal Cell; delivers custom resolution down to less than 0.3 amu.



## A COMPLETE ICP-MS SOLUTION

The multi-quadrupole NexION 5000 ICP-MS transcends current market offerings and delivers solutions to address even the most demanding trace-element analysis challenges. Plus, the NexION 5000 system offers:

- User-friendly Syngistix™ software (with built-in methods) that makes complex triple-quad workflows simpler
- Consumables and supplies that are interlaboratory tested to meet the highest performance standards
- OneSource® Laboratory Services, with teams of trained scientists and engineers who bring their real-life knowledge to you, plus compliance and education services

The NexION 5000 multi-quadrupole ICP-MS: Performance to the power of four

**For more information, visit [www.perkinelmer.com/nexion5000](http://www.perkinelmer.com/nexion5000)**

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