BioSpectrum
the business of Bio & Health Sciences

Waters Novel Cyclic IMS and New SYNAPT XS Lead Full Portfolio of Mass Spectrometry Innovations at ASMS

31 May 2019 | News

First-of-its-Kind Cyclic IMS Provides Unlimited Experimental Opportunities while the Research-Grade SYNAPT XS Brings Analytical Flexibility

Waters Corporation has unveiled two new high resolution mass spectrometry systems addressing the most challenging analytical needs of leading R&D scientists at the 67th Conference on Mass Spectrometry and Allied Topics (ASMS), June 2 – 6 in Atlanta.

The first-of-its-kind Waters SELECT SERIES Cyclic IMS

seamlessly integrates cyclic ion mobility (cIM) technology into a high performance research-grade time-of-flight mass spectrometer providing limitless experimental potential. Combining novel IMS capability with significantly improved mass spectrometry (MS) performance and enabling software, this platform allows leading researchers to unlock the potential in scientific discovery.

The SYNAPT XS is a new highly flexible, high resolution mass spectrometer for R&D labs focused on discovery applications which need the greatest variety of analytical strategies to tackle inherently challenging questions. By providing high-levels of flexibility through inlets and acquisition modes, the SYNAPT XS delivers greater freedom of analytical choice to support scientific creativity and technical success for any application.

Waters' full portfolio of MS innovations will be on display in Atlanta, including the ASMS debut of the BioAccord LC-MS System for Biopharmaceuticals, a purposefully designed solution that expands access to high-resolution time-of-flight mass spectrometry, including multi attribute monitoring capabilities, to more scientists who are analyzing critical quality attributes.

"The introduction of the Cyclic IMS and SYNAPT XS systems is an exciting manifestation of our increased R&D investments at Waters, particularly in mass spectrometry technologies," said Chris O'Connell, Chairman and CEO of Waters Corporation. "These powerful new technologies add to our portfolio of recent Mass Spectrometry introductions such as the BioAccord System, Vion™ IMS QTof and the ACQUITY™ QDa™ Detector, and signal the accelerating pace of our exciting overall new product development cycle at Waters."

New SELECT SERIES Cyclic IMS

Ion mobility mass spectrometry is a proven technique to rapidly obtain information for structural elucidation and significantly enhances system peak capacity. Waters is a champion of this technology and leads the way in instrument research and development. The SELECT SERIES Cyclic IMS takes ion mobility separations to a new level by replacing the traditional linear ion mobility region with a novel compact cyclic ion guide. Ions traverse around the ion guide and with every pass, greater ion mobility resolution is achieved. The innovative cyclic device provides scalable, high-resolution ion mobility separations and introduces the unique ability to perform ion mobility/ion mobility and IMS^n experiments, extending the benefits of routine ion mobility.

"The improvements in ion mobility resolving power combined with the flexibility of the instrument which allows IMS^n experiments, to select sub populations for further study, will be transformative for our work," said Dr. Kostas Thalassinos, a leading researcher at University College London, who has recently published results describing the benefits of the system for protein structural studies.

The Journal Analytical Chemistry documented the effectiveness and power of the cyclic IMS instrument in a recent article titled: A Cyclic Ion Mobility – Mass Spectrometry System.

New Research-Grade SYNAPT XS System

The SYNAPT XS is the newest iteration in the SYNAPT family of research grade mass spectrometers. The SYNAPT family is known and acclaimed for both its flexibility and its unique T-Wave IMS configuration, which significantly extends the power of high-resolution analysis. IMS capability on the SYNAPT increases the extent and confidence with which a scientist can profile complex mixtures and characterize complex molecules, and dramatically enhances sample definition.

The inherent power of SYNAPT is enhanced in the new SYNAPT XS with new technology building blocks that provide increased sensitivity for challenging compounds while further improving the levels of analytical robustness at far superior mass resolution than previous models. In addition, complementary modes of operation that increase analytical peak capacity providing 'clean and clear' fragmentation data provide a truly unique investigative toolbox for the interrogation of complex mixtures.

"Focused on discovery and characterization applications, the new SYNAPT XS provides enhanced levels of sensitivity and mass resolution combined with highly reproducible CCS measurements" said Joanne Ballantyne, PhD, Principal Marketing Manager Mass Spectrometry Systems. "Unlike competitors' systems with restricted inlet options, scan function limitations, or requiring multiple mass spectrometers, only Waters offers an all-encompassing high-performing LC-MS solution which, by design, provides greater freedom of analytical choice to support scientific creativity."

BioAccord LC-MS System for Biopharmaceutical Applications

The BioAccord LC-MS System for Biopharmaceuticals continues to address critical needs of biopharmaceutical customers by expanding access to high-resolution time-of-flight mass spectrometry capabilities to more scientists.

“Rollout of the BioAccord System continues to excite our biopharmaceutical customers as they contend with increasing complexity of their molecules and business models,” said Mike Wilson, Director, Product Marketing Mass Spectrometry Systems. “The BioAccord System is a holistic, purposefully designed, compliant LC-MS biopharmaceutical solution with intelligence built into our newly designed, ACQUITY™ RDa Detector. Given the inherent complexity of biologic molecules, the BioAccord System promises to move routine monitoring out of centralized MS labs and into the hands of more scientists by enabling more effective and reproducible analysis of biotherapeutic protein attributes across development and within quality control organizations."

Waters Presentations at ASMS 2019

Waters’ scientists will present more than 70 oral presentations and posters at ASMS many of which demonstrate the capability of ion mobility mass spectrometry for characterizing intact proteins, protein complexes, peptide mixtures, saponins, oligonucleotides, and lubricant oils.

Waters Corporation, the world's leading specialty measurement company, has pioneered chromatography, mass spectrometry, and thermal analysis innovations serving the life, materials, and food sciences for more than 60 years. With approximately 7,200 employees worldwide, Waters operates directly in 35 countries, including 15 manufacturing facilities, and with products available in more than 100 countries.