

IonDX Insider

CORPORATE UPDATE



Dr. Henry Benner presents at two scientific conferences

IonDX's Founder and CEO, Dr. Henry Benner was recently invited to present his talk, "Atmospheric pressure ion mobility for investigating the conformation of lowly-charged protein ions" at the International Conference on Ion Mobility Spectrometry in Memphis, TN.

Dr. Benner also attended the MS+M_22 Conference in Oxford, England, where he presented a talk entitled "Mobility detected Ions on EM Grid"

For copies of Dr. Benner's presentations, please email:

mframsted@iondx.com

IonDX welcomes Dr. Sriram Kumaraswamy

IonDX Inc. is happy to have Sriram Kumaraswamy as our Business Advisor.

Sri brings extensive experience in aligning innovation and commercialization efforts with business strategy for life science markets, most recently as the Head of Strategy Development for the Lab Products and Services division of Sartorius. Previously, as the head of marketing and sales teams at ForteBio, Sri helped grow the company to be a global leader in protein analysis. Sri has a Ph.D. in Organic and Physical Chemistry from UC Berkeley and did postdoctoral research at the University of Arizona.

Visiting Scientist, Anna Anders, joins IonDX

IonDX is proud to host Anna Anders as our first Visiting Scientist. Anna is currently pursuing her Ph.D in Chemistry at the University of Michigan in Dr. Brandon Ruotolo's Lab where she is doing research on ion mobility-mass spectrometry (IM-MS) and collision induced unfolding (CIU) for the structural study of nucleic acids. Her work at IonDX will focus on applying native Ion Mobility Spectrometry to interrogate RNA constructs and RNA-based drug delivery systems.

IonDX Inc. attended the 70th Annual ASMS Conference in June. This was our first in person conference since 2019. It was a wonderful opportunity to showcase the launch of our IMgenius™ system and share our technology with the presentation of 2 posters.



GHP Magazine Announces the Winners of the 2022 International Life Sciences Awards - GHP News

IonDX receives Global Health and Pharma's 2022 International Life Sciences Award for Best Biologic Drug Technology Provider West Coast



IonDX is actively scheduling demos, both in person and virtual.

View our IMgenius demo video:

www.iondx.com/blog/imgeniustm-instrument-demo



To schedule a demo with our IonDX Team
Email us at info@iondx.com



Save the date!

IonDX Hotel Seminar - Feb. 23, 2023

Follow us on LinkedIn for upcoming details

www.linkedin.com/company/iondx

<p>IMgenius™ Performance Specifications</p> <p>Introduction: IMgenius™ is an atmospheric pressure differential mobility ion mobility spectrometer. It is optimized for custom nano-electrospray ion source integrated in portable bench-top charged ions (10^4–10^7). These ions are introduced into the flow of a sheath gas and pass through a narrow orifice and a skimmer for high-velocity sample analysis, resulting in a narrow beam for efficient ion transport. Our patented technology simultaneously measures the relative mobility of ions.</p> <p>Automated platform technology:</p> <ul style="list-style-type: none"> Size distribution Structural conformations Stability Compatibility Purity Aggregation <p>Specifications:</p> <ul style="list-style-type: none"> Mobility range: 3.5×10^4–6.5×10^6 cm^2/Vs CCS range: 4×10^3–800×10^3 \AA^2 (per unit m/z) Scan time: 2.5 sec Dimensions: $20.2" \times 10" \times 10.2" (L \times W \times H)$ Site requirements: benchtop, 100 lbs, dry air and CO₂ at 50 psi Sampling: 170 LPM Sample requirements: 1 μl for 1000 scans Charge reduction: multiple charges reduced to 1⁺ Collection time: 100 μs <p>System modeling of the gas flow through the spectrometer accurately reproduces the path mobility throughout the spectrometer. Ion trajectories from field to detector are modeled using the knowledge of the data to further aid in the design and optimization of the instrument. The resulting data is used for the collection and analysis.</p>	<p>Screening mAbs with Recombinant Lectins and Ion Mobility Spectrometry</p> <p>Introduction: Accelerated drug development requires a new way to screen glycoproteins. IonDX Inc. has developed a benchtop analytical system to address this need. Our patented atmospheric pressure ion mobility spectrometer, IMgenius™, using our instrument platform built for m/z, mobility, specificity, purity, and labeling efficiency.</p> <ul style="list-style-type: none"> Platform technology - 3 min assay Improved specificity over classical HPLC Mobility shifts reveal subpopulations Minimum sample preparation Detection of surface groups <p>IMgenius™ system and methodology:</p> <p>IMgenius determines the mobility (M) of a population of molecular ions as they travel through a gas under the influence of an electric field. Small ions have higher mobility than large ions because they experience less drag as they travel through the gas. Ion mobility (M) is an ion's ability to move through the gas. The width of a peak in an ion mobility spectrum correlates with molecular heterogeneity. Three peaks indicate protein heterogeneity that could result from different molecular mass (LM, medium and heavy glycoforms) or different conformation (CCS).</p> <p>Deposition:</p> <p>Ion mobility spectra of food and drug ions are shown after deposition with IMgenius. Deposition indicates the size of the ions and allows the identification of different molecular ions.</p>	<p>Probing Native Protein Conformations with IMgenius™</p> <p>Introduction: Based on the current industry drive for accelerated drug development, there is a heightened need for analyzing native protein structure. Atmospheric pressure ion mobility spectrometry (AP-IMS) is an emerging analytical technology that addresses this challenge. IonDX Inc. has developed a benchtop analytical system, IMgenius™, based on this technology.</p> <p>Our patented spectrometer simultaneously measures the important attributes of proteins and biomolecules:</p> <ul style="list-style-type: none"> Size distribution Structural conformations Stability, including aggregation Compatibility <p>IMgenius™ System and Methodology:</p> <p>Charge-reduced electrospray: Classified samples are electrosprayed at 2.5 kV. Instead of using the electrospraying sprayer, a charge-reducing electrode where a dipole charge is induced to a single charge. Charge reduction is accomplished by replacing the sprayer to a metal rod and a grounded plate. The resulting spray is a highly charged, neutral protein spray. In this spray, ions travel through high charge states and remain in their native conformation, allowing native conformations to be studied.</p> <p>Atmospheric pressure ion mobility spectrometry: IMgenius determines the mobility (M) of a population of molecular ions as they travel through atmospheric pressure air and are detected as an ion current after they are collected into a plate or electrode by voltage applied to a central rod. Small ions have higher mobility than large ions because they experience less drag as they travel through a gas and therefore are deflected more easily. Ion mobility (M) is an ion's ability to move through the gas. The width of a peak in an ion mobility spectrum correlates with molecular heterogeneity. Three peaks indicate protein heterogeneity. Peak position (LM) value indicates molecular mass (LM, medium and heavy glycoforms) or different conformation (CCS).</p>	<p>Rapid Screening of Megadalton mRNA and dsDNA using IMgenius™</p> <p>Introduction: The recent global pandemic has highlighted the impact of nucleic acid-based molecules. The need for rapid, accurate, and sensitive detection of these molecules is a high priority. IonDX Inc. has developed a benchtop analytical system, IMgenius™, to address this challenge. The spectrometer can be used to profile native mRNA and DNA conformation using the same LM and CCS as dsDNA.</p> <p>IMgenius™ System:</p> <p>IMgenius system is a benchtop, atmospheric pressure-based ion mobility spectrometer that includes a charge-reducing electrode on source. The charge-reducing electrode is used to reduce the charge of the sample ions before they enter the spectrometer. This results in a highly charged, neutral sample that can be analyzed without the need for a charge-reducing electrode. The resulting spray is a highly charged, neutral sample that can be analyzed without the need for a charge-reducing electrode. The resulting spray is a highly charged, neutral sample that can be analyzed without the need for a charge-reducing electrode.</p> <p>mRNA Screening:</p> <p>Ion mobility spectra of various RNA species are shown after deposition with IMgenius. Deposition indicates the size of the ions and allows the identification of different molecular ions.</p>
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- **IMgenius™ Performance Specifications**
- **Screening mAbs with Recombinant Lectins and Ion Mobility Spectrometry**
- **Probing Native Protein Conformations with IMgenius™**
- **Rapid Screening of Megadalton mRNA and dsDNA using IMgenius™**

Visit the IonDX website to view our latest Application Notes, posters and videos.

www.iondx.com/literature