

OCTOBER 2018

MassMedia

PETROLEUM | ENVIRONMENTAL | FOOD | FORENSICS | MATERIALS | GAS MONITORING | MALDI IMAGING

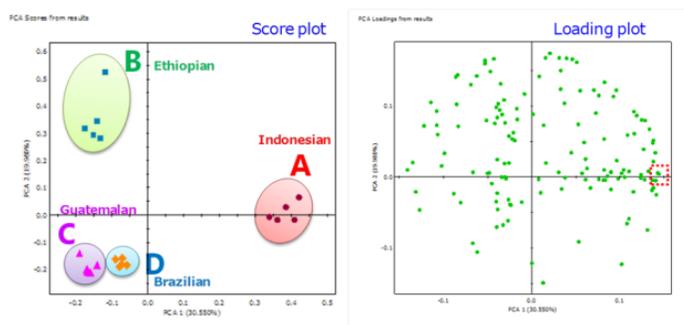


Mass Media Newsletter featuring latest news about JEOL mass spectrometry developments and applications.

Advances in Comprehensive Analysis with New Mass Spec Software

With high resolution and multiple ion sources the [JEOL AccuTOF-GCx-plus](#) high resolution GC mass spectrometer is ideal for problem solving with GC-MS. Now [SpectralWorks AnalyzerPro®](#) software is available to assist in interpreting the wealth of information provided by AccuTOF-GCx-plus analyses.

The software provides powerful data mining capabilities for processing GC-MS data including chromatographic deconvolution, chemometric analysis and database searching. JEOL has produced several new applications notes featuring comprehensive analysis of materials and food products with the AccuTOF-GCx-plus and AnalyzerPro.



[Comprehensive Analysis + Unknown Component Analysis of Coffee Samples Using Headspace GC-MS.](#)

[Comprehensive Analysis + Unknown Component Analysis of Vinyl Acetate Resins Using Pyrolysis GC-MS](#)

[Using Volcano Plots to Compare Vinyl Acetate Resin Samples Measured by Pyrolysis GC-MS](#)

Direct Gas Analysis: On the Road with InfiTOF

Our customers in oil and gas research are finding that the high resolving power of the InfiTOF can be instrumental in characterizing combustion and catalysis applications involving petroleum and biofuels.

The [InfiTOF mass spectrometer](#) has been traveling this year to several customer sites for evaluation and real-world applications.

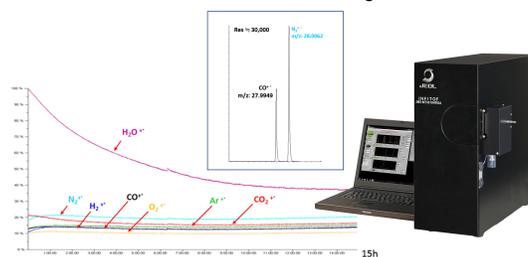
Now we are taking it to three upcoming events in the industry.

[Gulf Coast Conference](#)

[AIChE](#)

[Oil & Gas Chemistry](#)

The InfiTOF provides real-time continuous monitoring for gas samples. Unique multi-turn ion optics provide a mass resolving power of up to 30,000 or more and a mass range corresponding to m/z 1 to 1000. This permits detection of masses as low as H^+ and separation of peaks with closely spaced masses such as CO^+ and N_2^+ . Trace peaks in gas mixtures are instantly separated and identified without chromatography. See us in Galveston, Pittsburgh, or Houston this fall and contact us if you have questions.



Accurate Isotope Data Essential for Determining Elemental Compositions

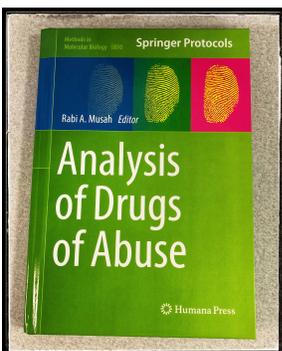
JEOL AccuTOF™ mass spectrometers (the AccuTOF™-DART®, the AccuTOF™-GCX and the AccuTOF™-GCX Plus) are capable of accurate isotope measurements that can be used to determine elemental compositions from high-resolution mass spectra. Matching the measured abundances and exact masses for isotope peaks can be more effective than mass accuracy alone.

[Read More>>>](#)

New in Published Papers and Books

Analysis of Drugs of Abuse – Ed. Rabi Musah

Congratulations to our colleague [Prof. Rabi Musah \(SUNY Albany\)](#) for her recently published book, Analysis of Drugs of Abuse. Chapters feature a comprehensive set of protocols that can be used to analyze drugs of abuse, including prescription drugs, new psychoactive substances and psychoactive plants. [Learn more about this new volume.](#)



Satoh, T.; Kubo, A.; Hazama, H. [Matrix-Assisted Laser Desorption Ionization Imaging Mass Spectrometry of Drug Distribution in Mouse Brain Tissue by High-Resolution Time-of-Flight Mass Spectrometry.](#)

[Faces of Mass Spectrometry](#) ASMS, August 2018

Fouquet, T.; Cody, R.B.; Ozeki, Y.; Kitagawa, S.; Ohtani, H.; Sato, H. [On the Kendrick Mass Defect Plots of Multiply Charged Polymer Ions: Splits, Misalignments, and How to Correct Them.](#)

Cody, R. [Ambient Profiling of Phenolic Content in Tea Infusions by Matrix-Assisted Ionization in Vacuum](#)

Cody, R. B.; Tamura, J.; Downard, K. [Quantitation of Anthocyanins in Fruit Extracts and Nutraceutical Formulations with Paper Spray Ionization Mass Spectrometry.](#) Journal of Mass Spectrometry 2018, 53, 58-64.

Cody, R. B.; Fouquet, T. [Resolution-Enhanced Kendrick Mass Defect Analysis of Polycyclic Aromatic Hydrocarbons and Fullerenes in the Diffusion Flame from a Butane Torch.](#) Journal of the American Society for Mass Spectrometry 2018, 29, 2110-2113.

See JEOL at These Upcoming Events

[Society of Forensic Toxicologists \(SOFT\) Oct 7-12, 2018 Minneapolis, MN Booth #104](#)

JEOL's [AccuTOF-DART mass spectrometer](#) provides immediate answers for forensics investigations, homeland security operations, toxicological examinations, environmental disasters, and clinical analyses. The AccuTOF DART can identify unknowns such as drugs, precursors, and other forensic materials almost instantaneously. The combination of rapid sample preparation methods such as solid-phase microextraction (SPME) with DART permits the detection of trace levels of drugs in body fluids. Stop by our booth to discuss applications for this technology and find out more about [JEOL solutions for forensics analysis](#).

[Gulf Coast Conference Oct 16-17, 2018 Galveston, TX Booth #107](#)

JEOL provides unique solutions for materials and chemical characterization for the petrochemical, refining, and environmental fields. The AccuTOF-GCx (GCxGC) mass spectrometer and InfiTOF high resolution direct gas analysis mass spectrometer are showcased in our booth. The InfiTOF will be live – please stop by to see it in action in booth #107.

[Greater Boston Mass Spectrometry Discussion Group Oct 18, 2018 Boston, MA](#)

[Northeastern Association of Forensic Scientists Oct 23-27, 2018 Bolton Landing, NY](#)

[American Institute of Chemical Engineers AIChE Oct 28-Nov 2, 2018 Pittsburgh, PA](#)

[Southeastern Regional Meeting - ACS - Oct 31-Nov 3, 2018 Augusta, GA](#)

[Society for Neuroscience Nov 3-7, 2018 San Diego, CA](#)

Look to JEOL for [Matrix-Assisted Laser Desorption Ionization Imaging Mass Spectrometry \(MALDI\)](#), solutions for neuroscience imaging and structural analysis of lipids, steroids and drug distribution directly on a brain or spinal tissue, analysis of charge remote fragmentations (CRF), fragmentations particularly informative for lipids, steroids, and peptides and a complimentary technique to microscopy.

[BrMASS Dec 8-12 Rio de Janeiro, Brazil](#)

JEOL Periodic Table Poster for Mass Spectrometry

Our 24" x 36" poster shows exact masses and abundances of natural isotopes for each element.

To request a printed poster [click here](#).

Do you know someone with NMR? Check out our helpful new NMR poster! To order a [copy](#), [complete the form at this link](#).

NMR: Step by Step

1. Sample and Magnet
 Samples are placed in a sample tube and inserted into the superconducting magnet. The magnet is cooled to liquid helium temperatures and filled with liquid nitrogen. The sample is then placed in the magnet and surrounded by liquid nitrogen.

2. Excitation
 Strong radio waves are generated by the probe coils in order to excite the nuclei. The radio waves are generated by the spectrometer. The nuclei absorb the radio waves and transition to a higher energy state.

3. Measure
 After excitation, the nuclei emit radio waves as they return to their ground state. These waves are picked up by the probe coils and sent to the spectrometer. The spectrometer then processes the data to produce a spectrum.

4. Process
 The raw data is processed into a spectrum by performing a Fourier Transform.

5. Interpret
 Once the data has been processed, the spectrum is interpreted. Parameters such as chemical shift, peak areas, and integrals can be extracted from the spectrum. These data parameters are then used to identify the sample.

JEOL Solutions for Innovation

www.jeolusa.com
www.jeolusa.com/nmr

Labels in diagram: Sample Tube, Sample Holder, Nitrogen, Helium, Superconducting Magnet, Probe, Pre-amplifier, Spectrometer, Fourier Transform.

Chemical structure shown: CC(=O)OC

Additional text:
 • Acquire chemical structure
 • Determine purity or quantitative analysis content
 • Gain insight into a variety of chemical processes of a large range of molecules
 • Study interactions between molecules, including drug target interactions

[View Our Complete Events Calendar Here](#)

For the latest news about JEOL mass spec users, publications, and products, join us on one of these social media pages:



JEOL Imaging and Analysis Solutions are Legendary! Click on the icons to learn more about our products.



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