

Mass Media

JEOL

Mass Spectrometry News and Applications

JEOL USA, Inc.

June 2011

Upcoming Events

ASMS

June 5-9 Booth #51
Denver, CO

Rocky Mt. Conf. on Analytical Chem.

July 24-28
Snowmass, CO

Fall ACS

August 29-31
Booth #1410
Denver, CO

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Back Issues of Mass Media



Visit with JEOL at ASMS Next Week Nearly 30 Presentations-DART®-MALDI-TOF

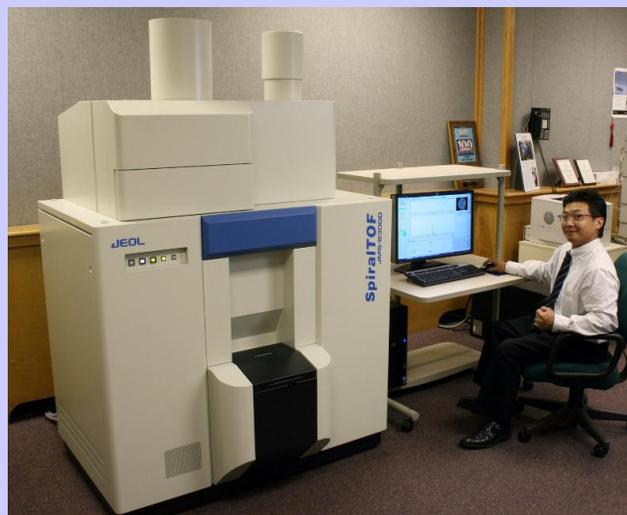
We're heading to the Colorado Convention Center this weekend for the 59th ASMS conference on Mass Spectrometry. Please look for us in booth #51 to learn what's new in JEOL mass spec instrumentation. Plus, there are 28 posters this year about JEOL mass spec. This year's lineup of posters covers topics ranging from small molecule and structural analysis using the new [SpiralTOF](#) MALDI-TOF-TOF to studying fragmentation of RNA Nucleotides and DNA Oligonucleotides using [AccuTOF-DART](#).



The ASMS Welcome Reception will be held Sunday night in the poster/exhibit hall. Monday through Thursday, poster sessions run from 10:30 am to 2:30 pm.

For a complete list of JEOL-related posters, [click here >>>>](#)

New SpiralTOF Comes to Peabody Demo Lab



Installation of JEOL's first commercially available MALDI-TOF mass spectrometer was recently completed in the Peabody, Mass. demo lab. The [SpiralTOF](#) is an exciting new addition to our mass spectrometer product line, with its unique figure-8 ion trajectory over a 17m flight path. We're looking

forward to new experiments and demo opportunities.

Featured DART References - Forensics

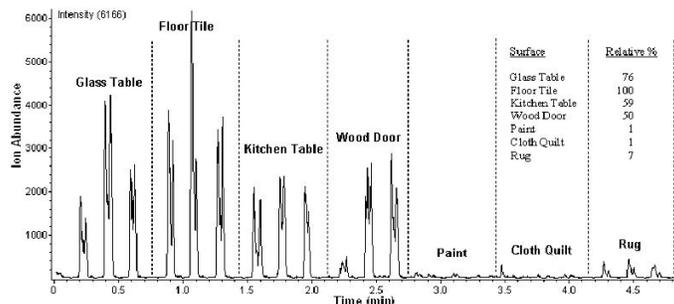


Samms WC, Jiang YJ, Dixon MD, Houck SS, & Mozayani A. *Analysis of Alprazolam by DART-TOF Mass Spectrometry in Counterfeit and Routine Drug Identification Cases.* *Journal of Forensic Sciences*. Article first published online: 6 APR 2011

The high prevalence of alprazolam abuse translates to an increased workload for crime laboratories in characterizing seized tablets. These tablets may originate as diverted pharmaceuticals or counterfeit mimics, so efficient analytical techniques should provide confirmatory data while minimizing destruction of evidence. We offer the first report of a validated forensic method for confirming alprazolam tablets by direct analysis in real time-time of flight (DART-TOF) mass spectrometric analysis. This technique provides rapid identification of target analytes with minimal sample preparation, allowing direct analysis in the atmospheric sample gap. Selectivity is achieved through high resolution and mass accuracy, unique ion fragments, and chlorine isotopic ratios. This method utilizes fragmentation in two separate voltage functions to observe the alprazolam pseudo molecular ion at 309.09070 using 40 V and major ion fragments of 281.07197 and 205.07657 at 120 V. These parameters allow our laboratory to confirm alprazolam tablets efficiently, without compromising quality forensic standards.

Grange AH & Sovocool GW *Detection of illicit drugs on surfaces using direct analysis in real time (DART) time-of-flight mass spectrometry.* *Rapid Communications in Mass Spectrometry* 25(9):1271-1281.

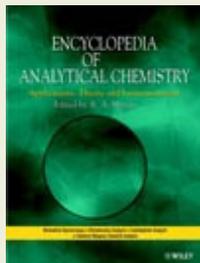
Methamphetamine (meth) from meth syntheses or habitual meth smoking deposited on household surfaces poses human health hazards. The U.S. State Departments of Health require decontamination of sites where meth was synthesized (meth labs) before they are sold. National Institute for Occupational Safety and Health (NIOSH) methods for meth analysis require wipe sampling, extraction, clean-up, solvent exchange, derivatization, and/or mass spectral analysis using selected ion monitoring. Rapid and inexpensive analyses could screen for drug-contamination within structures with greater spatial resolution, provide real-time analyses during decontamination, and provide thorough documentation of successful clean ups. Herein an autosampler/open-air ion source time-of-flight mass spectrometric technique is described that required only direct sampling using cotton-swab wipes. Each wipe sample collection required 2min and data acquisition required only 13s per sample. Optimum collision-induced dissociation voltages, desorption gas temperatures, and wipe sample solvents were determined for 11 drugs. Peaks were observed in analyte-ion traces for 0.025µg/100cm² of meth and seven other drugs. This level is half the detection limit of NIOSH methods and one-fourth of the lowest U.S. state decontamination limit for meth. Dynamic ranges of 100 in concentration were demonstrated for eight drugs, which is sufficient for a screening technique. The volatilities of 11 drugs deposited on glass were determined. The pick up of the drugs by solvent-soaked cotton-swab wipes from glass relative to acrylic latex paint was also compared.



Analyte ion chromatogram (m/z 148) for pseudoephedrine from triplicate sets of cotton-swab wipe samples acquired from household surfaces after depositing 10 µg of the drug onto 100 cm² areas.

[See story on SpectroscopyNow.com >>>](#)

Mass Spec & NMR Reference Data



New [Encyclopedia of Analytical Chemistry](#) with chapter on DART by R. Cody and

A. Dane



Mass Spectrometers

[SpiralTOF MALDI-TOF/TOF MS](#)

[AccuTOF-DART Direct Analysis in Real Time](#)

[AccuTOF-GCv Time of Flight MS](#)

[GCMate II GC/MS Benchtop Double-Focusing MS](#)

[MStation Double-Focusing Magnet Sector MS](#)

NMR Spectrometers

[ECS-400 NMR Spectrometer](#)

[Our EC NMR Series](#)

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ESR Spectrometers

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