

# Mass Media

# JEOL

Mass Spectrometry News and Applications  
JEOL USA, Inc.

October 2007  
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## In This Issue

Brominated Flame Retardants

From Flask to Finish Chemical  
Synthesis Monitoring with DART

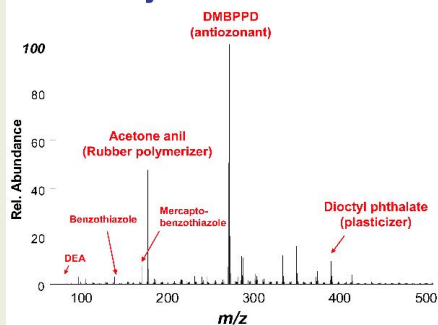
Lineup of Upcoming Events

New Book: Forensic  
Analysis on the Cutting Edge

High Speed Chemical  
Analysis for Polymers



## DART Analysis of Automobile Tire



Real-time, open-air analysis of a rubber

## Deca-BDE: Flame Retardants in the Bay

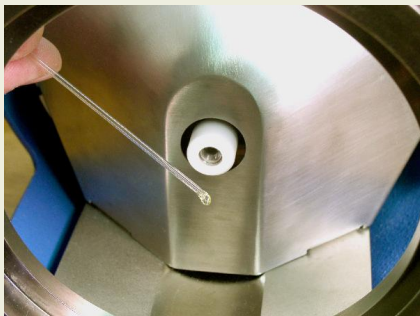


What began as a state-funded fish monitoring program for priority pollutants in the Chesapeake Bay turned into a different type of catch when researchers at the [Virginia Institute of Marine Science \(VIMS\)](#) in Gloucester Point, Virginia found unexpected compounds in their analyses.

"We began looking at samples from the bay and its major tributaries on a five-year cycle," Mark LaGuardia, Senior Scientist, explains. "We expected to find PCBs, pesticides and other historic pollutants, but beginning in the mid-90's PBDEs started showing up in our chromatograms." Brominated flame-retardants or polybrominated diphenyl ethers (PBDEs) are found in computers, cell phones, and throughout our homes, offices, and environment. Mark has been successful in the isolating and identifying previously unreported congeners within the technical PBDE-formulations and potential deca-BDE metabolites in biota collected from wastewater tainted streams.

sample taken from an automobile tire.

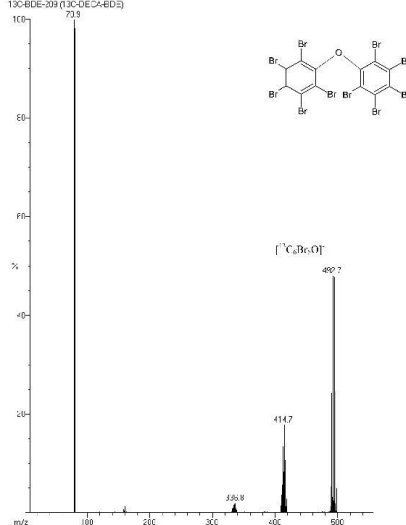
The JEOL AccuTOF DART(TM) is a breakthrough in mass spectrometry. Now you can measure high-resolution, accurate mass spectra by simply placing a sample, in its native form, between the DART ion source and the AccuTOF mass spectrometer inlet. No solvents or sample preparation required. The DART source ionizes almost anything you put in front of it including solutions straight from your synthetic reaction pot, crude extracts, unknown sticky liquids, vapors, and more.



New findings were published in October 2007 (Environmental Science and Technology, Vol. 41, No. 19, p.6663-6670) that, for the first time, proves that deca-BDE (the fully brominated diphenyl ether, containing ten bromines) does debrominate once released into the environment. For more information, [visit REALab](#), or click on the data.

mJ\_012105\_no\_17|13C-BDE209\_2500ng\_1u\_inj@300C\_tuned on 331

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## From Flask to Finish - Optimize Chemical Synthesis Workflow

Change the way you think about your chemical synthesis workflow. Now you can quickly obtain mass spec data without losing time to sample preparation.



Check your reaction at any step:

- starting materials
- intermediates
- mixture analysis
- side products
- purification.

Let the [AccuTOF-DART\(TM\)](#) mass spectrometer streamline your experiments and synthesis workflow with:

- Real time reaction monitoring
- Characterization
- TLC plate analysis
- LC fraction analysis
- NMR tube sample analysis

### See JEOL at These Events

#### 24th Montreux LC/MS

Oct 10-12, 2007  
Hilton Head, SC

Inv. Talk Oct 8 9:40-10 a.m.

"DART: The Current State of the Art. New understandings, new chemistries, new applications"

#### SOFT

Society of Forensic Toxicologists

Oct 13-20, 2007  
Chapel Hill, NC

#### FACSS

Federation of Analytical Chemistry and Spectroscopy Societies

Oct 14-18, 2007  
Memphis, TN

Inv. Talks Oct 18 3:25 p.m.

"[Hitting the Bullseye More Often: Extending the Applications for the DART Ion Source](#)"

"[Direct High-throughput Analysis of Pathogenic Bacteria by DESI and DART](#)"

#### CPSA

Chemical & Pharmaceutical Structure Analysis

Oct 22-25, 2007  
Langhorne, PA  
Vendor Session Talk

#### ASMS Fall Workshop

"The Art of Open Air Ionization on Surfaces"  
Nov 8-9, 2007

Chemical Heritage Foundation  
Philadelphia, PA

"[The Development of a Searchable](#)

[Library for Direct Analysis Real Time \(DART\) Accurate Mass Spectra Data,"](#)  
[Lisa Schumacher, FBI Laboratories](#)

"DESI and DART for Counterfeit Drug Fingerprinting," Facundo M. Fernandez, Georgia Institute of Technology

"The Art of DART," R. Cody, JEOL USA

### EAS

Eastern Analytical Symposium & Exhibition Nov 12-14, 2007  
Somerset, NJ

**Monday, Nov 12**

**2:00** Applications of DART in Drug Discovery, Christopher Petucci, Wyeth

**3:50** The Art of DART: Extending the Range of Applications Beyond the Conventional, Robert B. Cody, JEOL USA

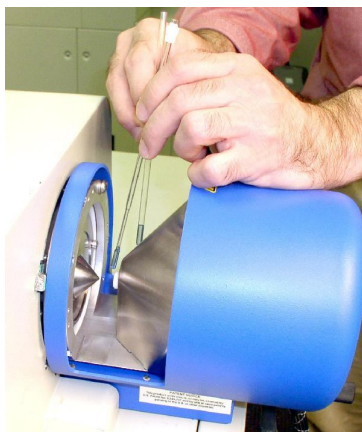
**4:20** DART: The Practical Solution to Some Difficult Real Problems, James A. Laramée, SAIC

**Tuesday, Nov 13**

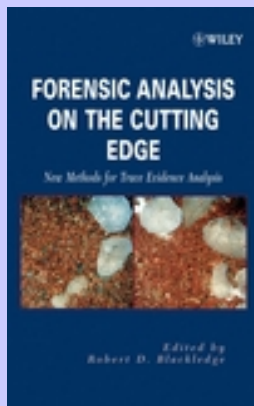
**2:00** DART: Bridging the Gap between Hollywood Forensics and Reality, Robert B. Cody, JEOL USA

**Wednesday, Nov 14**

**10:40** Use of Direct Analysis in Real-time Mass Spectrometry (DART-MS) in the Preservation of Historic and Artistic Works at the Library of Congress, Jeanette Adams, Library of Congress



## Forensic Analysis on the Cutting Edge



A new book published by Wiley-Interscience features a chapter on the revolutionary use of Direct Analysis in Real Time (DART) mass spectrometry for forensics. Samples from the human body, including analysis of TATP on a fingertip, analysis of bodily fluids, drugs, chemical warfare agents, arson accelerants, inks and adhesives are included.

"Forensic Analysis on the Cutting Edge - New Methods for Trace Evidence Analysis" - is available now from [Wiley](#) or other booksellers.

### Quick Links

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### CONTACT JEOL

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## JEOL Mass Spectrometers

All JEOL mass spectrometer systems feature exact mass, high-resolution capability.

### Open Air Analysis - No GC, No LC!

**AccuTOF™ DART™** The AccuTOF DART seamlessly integrates the AccuTOF time-of-flight mass spectrometer with the revolutionary DART ion source. Collect mass spectra by simply placing your sample in the ionization source gap, under completely ambient conditions. Also comes standard with an ESI source.

### LC/MS

**AccuTOF™ LC** A time-of-flight mass spectrometer system designed for LC/MS. Available ion sources include ESI, APCI, micro ESI, nano ESI, corona ESI and dual ESI.

### GC/MS

**AccuTOF™ GC** A time-of-flight mass spectrometer system designed for GC/MS. Available ion sources include EI, CI, DEP/DIP and FD/FI.

**GCmate™ II** A benchtop size, high-resolution, double-focusing magnetic sector system. EI and CI sources come standard. FAB and linked scan capability are also available.

### High-Performance Magnetic Sector

**MStation™** A full-featured, magnetic sector mass spectrometer available for both LC/MS and GC/MS analyses.

## All New NMR Spectrometer for Chemists in Academia and Industry



A new, fully-digital NMR Spectrometer System from JEOL is ideal for chemists in both walk-up academic environments and industrial synthetic laboratories.

The [ECS-400](#) is a full featured, 2-channel, digital NMR console with a compact footprint.

Features include:

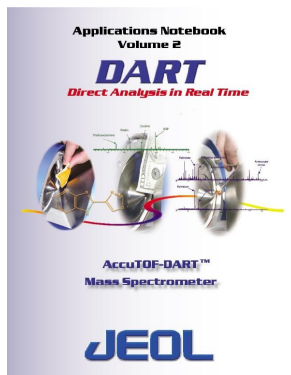
- Jastec 400 MHz Super Self-Shielded superconducting magnet
- Cyber-enabled, full automation accessible from multiple PCs
- Delta(TM) software site license for Windows XP and Mac OS X platforms
- New 400 MHz multinuclear, broadband, automatic tuning and matching, pulsed field gradient NMR probe

If you're looking for an expandable multi-channel console, contact us or visit our NMR webpages.

## Tutorials and Applications Notes

Bookmark [www.jeolusa.com](http://www.jeolusa.com) for complete access to useful mass spec [tutorials](#) and [applications notes](#).

The tutorials have been updated and include useful reference tables for day-to-day DART operation.



New! The 3rd Edition of the AccuTOF-DART Mass Spectrometer Applications Notebook is now available online. To download the pdf file of this booklet, visit our [webpage](#). This booklet is also available as a color printed, spiral bound printed document that can be requested by contacting us at [jeolink@jeol.com](mailto:jeolink@jeol.com).

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