

Mass Media

JEOL

Mass Spectrometry News

March 2000

PITTCON Showcase

LCmate to be Exhibited at PITTCON

The JEOL *LCmate* will be on display at PITTCON March 12-17 in New Orleans booths #2822 & #2823. The bench-top high-resolution mass spectrometer system will be fully operational and able to demonstrate more than 5000 resolving power. Onlookers are invited to operate the *LCmate* themselves. By using electrospray ionization, an auto-sampler and flow injections, visitors are invited to pick one of several provided vials and use the Open Access software to find out which of several common drugs the vial contains.



LCmate

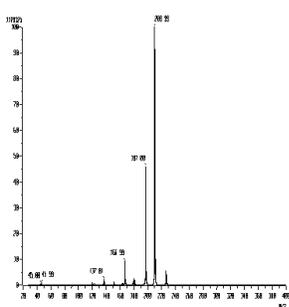
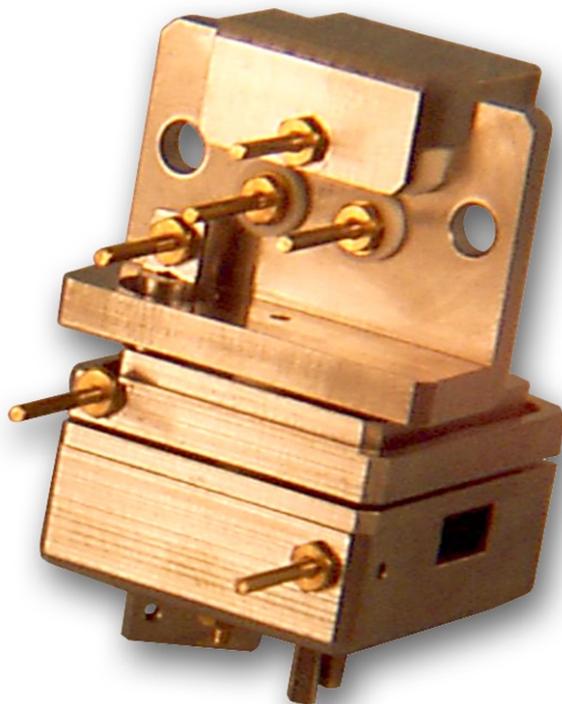
Try it at PITTCON 2000
Booths 2822 & 2823

TEEM Tuneable-Energy Electron Monochromator

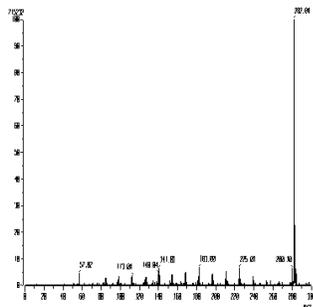
New!

See me at PITTCON
Booths 2822 & 2823

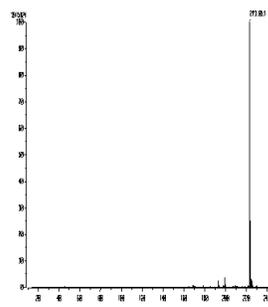
- ▶ User-selectable electron energies from 0 to ~30 eV.
- ▶ Highly reproducible mass spectra.
- ▶ Elimination of the problematic bipolar NCI plasma.
- ▶ Higher sample throughput in positive and negative ion mode because of simplified and electronic control over the electron energy.
- ▶ Extended ion source operation because there is no buffer gas.
- ▶ Isomer discrimination through structure-dependent electron capture resonances



Explosive: TNT (-)



Hydrocarbon: Eicosane (+)



Nitro-PAH: 9-nitroanthracene (-)

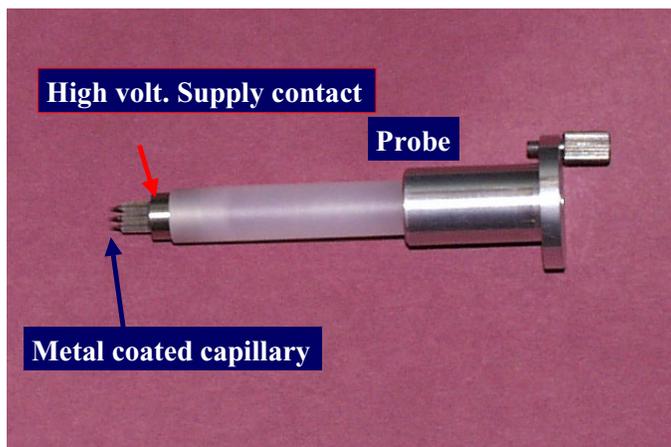
The *new* JEOL trochoidal electron monochromator provides an intelligent alternative to the standard gas-moderated negative-ion chemical ionization (NCI) source. Negative ions are formed directly under electron capture conditions by using an electron source with well-defined electron energies in the range of 0 eV to around 30 eV. The electron monochromator can also be used for positive-ion applications.

Direct formation of negative ions provides information that can be used to identify target compounds and distinguish isomers. Because there is no reagent gas and no bipolar plasma, the electron monochromator provides highly reproducible negative-ion mass spectra and avoids artifacts that can be observed in conventional NCI. The electron monochromator can be installed on all current JEOL mass spectrometer models.

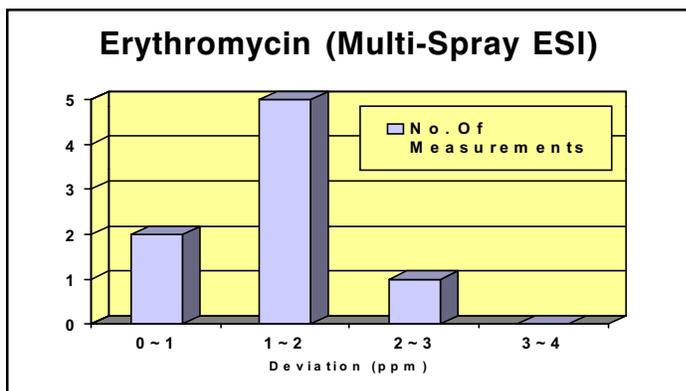
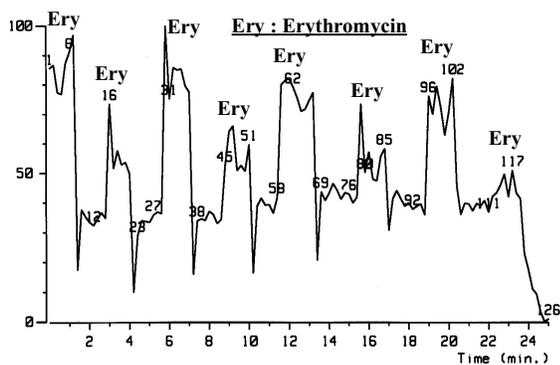
New!

Multi-Spray Nanospray ESI Probe

A multiple spray probe has been developed for use with the JEOL nanospray ESI source. The multi-spray probe can be used to introduce microliter volumes of sample and reference compound for high-resolution exact-mass analysis. Because the sample and reference compound are sprayed independently, there is no possibility of sample suppression. This makes exact mass measurement much easier and permits the analysis of very small sample quantities.



Multi-sprayer/ Nano-ESI Probe

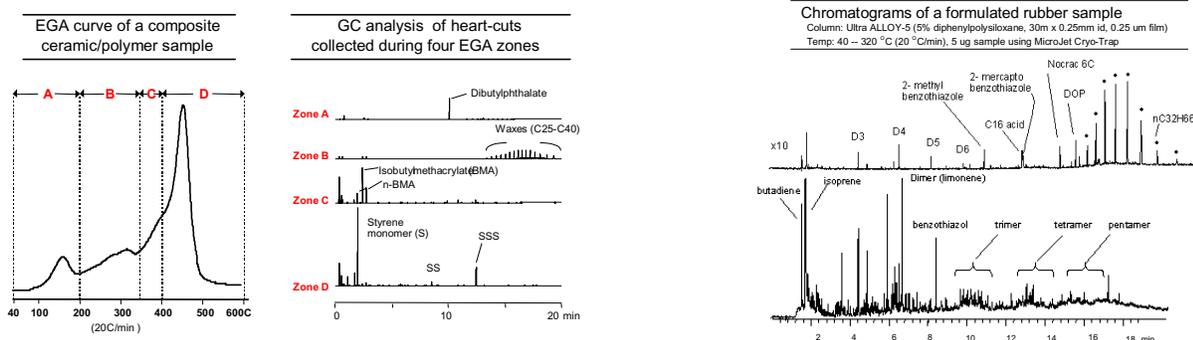


*Reproducibility for 8 exact mass measurements of erythromycin $[M+H]^+$
by using the multi-spray nano-ESI source.*

Other News

Frontier Labs Thermal Analysis System 2020 for JEOL GC/MS to be Exhibited at PittCon 2000

The *Frontier Lab* Thermal Analysis System 2020 will be on display at the JEOL booth at PittCon this year. The unique "double-shot" thermal analysis system mounts onto the GC inlet to provide both thermal desorption and pyrolysis with a single sample loading. The evolved gas analysis (EGA) capability permits the user to select zones of the EGA profile for "heart-cut" GC/MS analysis with Pyrolysis Library search capability. The *Frontier Labs* Thermal Analysis System 2020 can be used to analyze a wide variety of sample types including: polymers, additives, coatings, fibers, elastomers, adhesives, inks, paper, and forensics. The combination of the *Frontier Labs* Thermal Analysis System 2020 with the *JEOL GCmate* benchtop high-resolution mass spectrometer provides unmatched problem-solving capabilities.



LC-MS/NMR System Demonstrated at JEOL Ltd. Uses LCmate

JEOL Ltd. (Akishima, Tokyo, Japan) has demonstrated a combined LC-MS/NMR system based upon the *JEOL LCmate* benchtop high-resolution mass spectrometer and the *JEOL Eclipse+ 500 MHz* NMR system. Modes of operation included an on-flow method, a stop-flow method, and a fraction-loop method. High-resolution mass spectra were acquired for elemental composition determinations as well as linked-scan MS/MS data and ^1H NMR spectra.

Dephy Technologies Adapts MAB Source to JEOL Mass Spectrometers

Dephy Technologies (Montreal, Quebec) has adapted their MAB (metastable atom bombardment) ion source for use with JEOL mass spectrometers. The MAB source relies on reactions between metastable atoms and analyte molecules to provide quantized ionization energies in the range 8-20 eV. Choosing the appropriate gas to generate the metastable species can control the ionizing energy. This provides reproducible, sensitive and selective ionization of target analytes based upon their ionization potential.

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