



Ultra Trace

CETAC introduces ASXPRESS™ Rapid Sample Introduction System

The ASXPRESS™ product line of Rapid Sample Introduction Systems delivers real time savings for ICP and ICP-MS analysis processes while preserving analytical data quality and system stability. These benefits are further complemented by reduced ICP/ICP-MS maintenance costs and by the ASXPRESS™ system's reliable operation, day in, day out. Simple installation makes incorporation of the ASXPRESS™ quick, easy and effective.

How does it work? Coupled with the industry standard CETAC autosampler, the ASXPRESS™ reduces the time normally required for autosampler movement, sample uptake, stabilization, and rinse operations, thereby reducing sample run times significantly. The ASXPRESS™ high speed vacuum pump loads sample and flushes the sample uptake path substantially faster than a conventional peristaltic pump. Liquid flow path washout characteristics are exceptional, thanks to CETAC's uniquely designed liquid flow system. Additionally, the system design allows multiple functions to occur simultaneously. The result? **More sample throughput in less time!!!**

It's simple. The ASXPRESS™ easily integrates into the conventional sample flow path without requiring invasive modification to analysis methods. An easy to use Windows® based settings tool configures the device, with no additional software needed for operation.

The ASXPRESS™ system is comprised of two main components: an electronics module and a valve/pump module. The separate modules provide the smallest possible injection valve footprint, allowing the valve to be placed close to the instrument nebulizer.

The ASXPRESS™ product line is compatible with CETAC ASX-130, ASX-260, ASX-500, ASX-510, ASX-520, ASX-520HS, EXR-8, ASX-1400 and ASX-1600. Autosamplers and can easily be fitted to samplers currently in operation, or can be purchased as a full system, including the ASXPRESS™ and an autosampler of your choice.

Visit www.cetac.com, or contact your local CETAC Technologies sales professional to learn more about how the ASXPRESS™ product line of rapid sample introduction systems can benefit your laboratory operation!



ASXPRESS™ Rapid Sample Introduction System

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CETAC Marin-5 Enhanced Nebulizer System



Trace Level Analysis with Marin-5 and ICP-MS

Detection of trace levels ($\mu\text{g/L}$ or less) of the platinum group elements (PGEs) is desirable due to the wide range of important uses for these metals. Examples include high-temperature alloys, petrochemical catalysts, coinage and jewelry, and anti-cancer drugs (ex. cisplatin).

The new CETAC Marin-5 enhanced nebulizer system can be coupled with quadrupole ICP-MS to reduce PGE detection limits up to 5 times or more. In addition, samples can be self-aspirated to the Marin-5 at low to medium flow rates (ex. 0.25 mL/min), avoiding memory effects from peristaltic pump tubing and preserving sample / minimizing waste.

The Marin-5 couples a concentric pneumatic nebulizer with a specialized heated spray chamber (patent pending) to improve analyte transport to the ICP-MS. A dedicated electrothermally cooled condenser prevents excessive solvent loading to the ICP-MS plasma.

Sensitivity Enhancement

The table below compares quadrupole ICP-MS sensitivity for the PGEs with a standard concentric nebulizer / cyclonic spray chamber configuration and the Marin-5 for a $5 \mu\text{g/L}$ standard solution in $1\% \text{ HNO}_3 / 1\% \text{ HCl}$. Solution uptake (self-aspiration) to the Marin-5 was 0.25 mL/min compared to 1.0 mL/min (pumped) with the standard nebulizer; signal enhancement ranges from a factor of 3.3 to 6.7 with an average factor of 5.4. The lower enhancement for Au may be due to its higher first ionization energy of 9.2 eV .

Analyte	m/z	Std. Neb. (cps)	Marin-5 (cps)	Factor
Ru	101	19580	132900	6.7
Rh	103	113990	738200	6.5
Pd	105	24900	152400	6.1
Ir	193	52390	289400	5.5
Pt	195	21660	92530	4.3
Au	197	30650	101650	3.3

Instrument Detection Limits

Instrument detection limits for the PGEs were then compared between the standard nebulizer and the Marin-5 using a 3 second integration time. Detection limits are lowered by factors from 2.5 to 9, with an average factor of 4.8.

Analyte	m/z	Std. Neb. (ng/L)	Marin-5 (ng/L)	Factor
Ru	101	1.8	0.2	9
Rh	103	0.2	0.05	4
Pd	105	0.7	0.2	3.5
Ir	193	0.3	0.08	3.7
Pt	195	0.5	0.2	2.5
Au	197	1.3	0.2	6.5

The CETAC Marin-5 can significantly enhance ICP-MS sensitivity and reduce element detection limits. Care should be taken with regards to laboratory and reagent blank levels (ex. HNO_3 and HCl) to achieve the best results.

Is Your QuickTrace™ Software Up-To-Date?

Are you still running the software that came with your QuickTrace™ Mercury Analyzer? There is a great feature called QuickTrace Update built right into the QuickTrace™ Software designed to ensure your software is always up-to-date. CETAC continuously makes improvements to our QuickTrace™ Software, so we strongly encourage all users to update the system software. It is fast, easy, and **completely free!**

If your instrument PC is connected to the internet, you can update your QuickTrace software in just moments. QuickTrace Update can be accessed by navigating to the Start Menu | All Programs | CETAC QuickTrace. Once the program has launched, simply click the "Update" button. This feature will open up a secure portal to the CETAC.com server, check the software version, and if a newer version is available the system will install the upgrade automatically.

If your instrument PC is not directly connected to the internet, you can still download the software upgrade through the cetac.com Service and Support downloads feature.

One recently added feature to the QuickTrace™ Software is peak area for all modes, all methods, all instruments, allowing the use of peak area for ppb and ppt analysis on CVAA systems. Using peak area instead of peak height greatly increases system throughput.

FREE QuickTrace™ M-8000 Mercury Analyzer Training

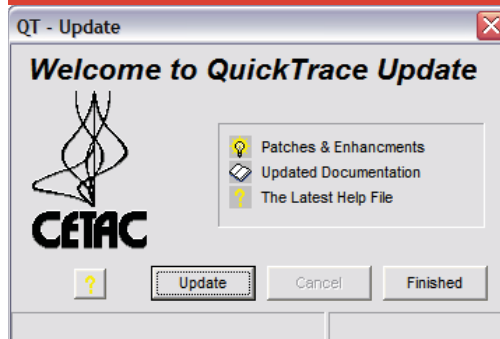
Getting the most efficiency from your Cetac QuickTrace™ M-8000 requires thorough knowledge of the instrument, sampling procedure and the system software. All of these elements must be pulled together by a skilled and knowledgeable analyst. If you feel that you need to improve your instrument skill level, you are invited to attend a free training class on developing proficiency with the M-8000 Mercury Analyzer.

You will learn how to:

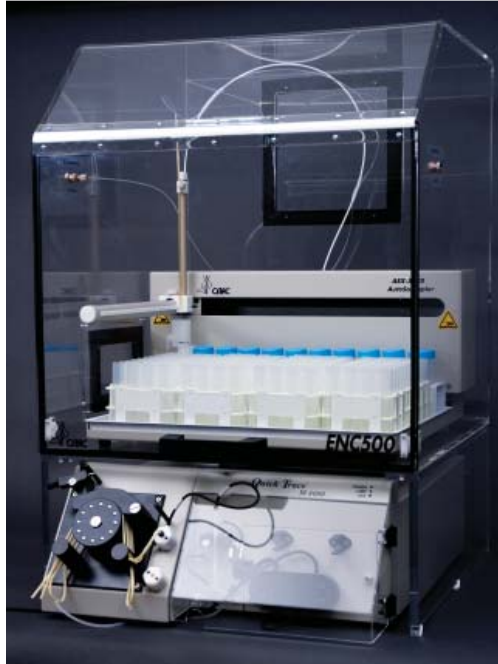
- Operate the CETAC QuickTrace™ Mercury analyzer software
- Develop methods
- Differentiate between hardware, software, and chemical problems
- Build low level purging stations and apparatus
- Keep the instrument properly maintained
- Maximize uptime by performing basic troubleshooting and repair

Please visit www.cetac.com/mercury_analyzers/ to submit a registration form for the May 4-6, 2010, FREE training class, space is limited.

For more information, please contact Jeff Forsberg, jforsberg@cetac.com or telephone 1-800-369-2822.



QuickTrace Update software screen



QuickTrace™ M-8000 Mercury Analyzer

CETAC Technologies' Commitment to Service

Quality service is more than just a slogan at CETAC, it's a way of life! CETAC Technologies has always been committed to the service to our customers. We understand that laboratories are varied in their ability to service their own equipment, so we strive to provide a wide range of both information and services to best protect your equipment and your budget.

For the self-supported lab we have a wide range of part replacement processes that give step by step instructions for parts replacement posted on our web site as well as technical phone support. For the lab that typically does not require budgeted repairs for service we offer a time and materials repair service conducted at our manufacturing facility located in Omaha, Nebraska. For the lab that requires prompt, budgeted service we offer service contracts that allow them to have a fixed price for instrumentation repair with little or no down time.

CETAC's service department maintains a stock of loaner instruments that can be rented during a time and materials repair and are included in the cost of our annual service agreement. We also support our international customers with service depots in England, Germany and Singapore.

For more information on Service or Service Contracts and pricing please contact Don Borsh, Customer Service Manager. Email dborsh@cetac.com or telephone 1-800-369-2822.

New Employees at CETAC Technologies

CETAC Technologies continues to add new dimensions of expertise to our growing company. In recent months, several new positions have been filled.

Paul Goble has filled the position of Technical Writer where he will lead in the production of CETAC's entire array of technical documentation. His prior experience includes over two decades with Agilent and Hewlett Packard producing manuals and online help, advising other technical writers and promoting best practices through creative documentation and labeling.

Michael Sgroi comes into the new role of Automation Product Development Scientist. He brings a specific knowledge of oils and wear metals analysis and will focus on managing the CETAC portfolio of products directed to those markets. Sgroi brings prior research chemistry experience working with a wide array of analytical techniques including ICP, GC, IC and FTIR.

Bill Spence has joined CETAC in the position of European Business Development Manager. Spence has a strong technical and commercial background in atomic spectrometry, with nearly a decade of prior experience at Thermo Fisher Scientific where he focused on AA, ICP and ICP-MS. Bill works closely with OEM and end-user customers as well as CETAC's European dealers and internal Product Managers to further the business within European territories. Bill can be contacted at bspence@cetac.com or 44 (0) 161 434 8804.



Spring 2010 ICP-AES/ICP-MS Continuing Education Series

CETAC is offering a week-long ICP-AES/ICP-MS lecture and laboratory series this Spring, April 19-23, 2010. As the background and training of ICP-AES and/or ICP-MS operators can vary so much in today's laboratories, this series has been designed to satisfy the continuing education requirements of quality programs and to appeal to personnel with varying backgrounds.

Three separate courses are offered: Introduction to ICP-AES, Introduction to ICP-MS, and new for 2010, Introduction to Laser Ablation.

Introduction to ICP-AES and Laboratory Session (April 19-20, 2010)

This course will include the concept of ICP-AES spectrometry from the physical nature of the source through the various components of the instrumentation. Other topics will include calibration, background correction, interelement effects, and sample introduction accessories. The laboratory session will emphasize hardware components and performance parameters.

Introduction to ICP-MS and Laboratory Session (April 21-22, 2010)

The components that comprise an ICP-MS instrument will be described with particular detail for those items that are not in common with ICP-AES systems. Topics such as interferences, data acquisition, sample preparation, and accessories will be discussed. Laboratory exercises will demonstrate hardware function, optimization, and calibration.

Introduction to Laser Ablation (April 23, 2010)

New for 2010, CETAC is offering a 1-day course highlighting laser ablation techniques used with ICP-AES and ICP-MS. The course will cover the fundamental physics of laser interaction with various matrix types. Instruction will include various calibration strategies and how they are applied to method development for sample introduction into various ICP and ICP-MS detectors. Both typical and new application areas will be covered.

Each course may be attended separately or combined. Course fees are \$900 per person for 2-day courses, \$450 for 1-day course. Additional information is available online at www.cetac.com/news_events/icp-training.asp. If you would like to register, or to receive more information, please contact Mr. Todd Maxwell, Continuing Education Administrator, by any of the methods listed on the registration form below. To reserve enrollment, payment should be received by April 2, 2010. Space is limited.

PittCon

Orlando, FL
February 28–March 5, 2010
Booth #2104, 2105
www.pittcon.org

Analytica

Munich, Germany
March 23–26, 2010
Booth #A1.218, A1.503
www.analytica.de

Nordic Conference on Plasma Spectrochemistry

Loen, Norway
June 6–9, 2010
www.nordicplasma.com

Goldschmidt

Knoxville, TN
June 13–June 18, 2010
www.goldschmidt2010.org

European Workshop on Laser Ablation

Kiel, Germany
June 29–July 1, 2010
www.ewla.eu

JAIMA

Makuhari Messe, Japan
September 1–3, 2010
www.jaimasis.jp

How to register:

By phone:

800-369-2822
or 402-738-5416

By fax:

402-733-5292

By e-mail:

tmaxwell@cetac.com

By mail:

Complete and mail this form to:

CETAC Technologies
Attn: Todd Maxwell
14306 Industrial Rd.
Omaha, NE 68144

Name _____

Title _____

E-mail _____

Please list additional registrations on a separate sheet and attach.

Company _____

Mailing Address _____

City _____ State _____ ZIP _____

Telephone _____

Fax _____

Course Selection

Introduction to ICP-AES & Lab April 19-20, 2010 - \$900

Introduction to ICP-MS & Lab April 21-22, 2010 - \$900

Introduction to Laser Ablation April 23, 2010 - \$450

Payment Information:

Check enclosed, payable to:
CETAC Technologies
Check # _____ Amount _____

Purchase order attached:

Invoice my company:
Attention: _____

Credit Card: Visa M.C.
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Signature _____

New DigiLaz III™ Software Released for CETAC Laser Ablation Systems

CETAC proudly announces the release of the new DigiLaz™ III operating software for the LSX-213 laser ablation system. DigiLaz III software gives the user complete control over the instrument, from navigating the sample and creating methods to performing sample analyses.

Several new features have been added in this latest generation DigiLas software, including a new ablation method of multiple line scans for profiling entire sample surfaces.

All the great features from previous versions of DigiLas software have been included as well. All functionality and control remains accessible from the main screen, including the capture of still images and real-time video.

The DigiLaz III software features an enhanced interface that is both flexible and intuitive. It is designed with the familiar look and feel of the latest professional productivity suites, allowing easy access to all method parameters and enhanced control. DigiLas III is compatible with Microsoft Windows® XP, Windows® Vista and Windows 7®.

The CETAC LSX-213 Laser Ablation System is a self contained solid sampling accessory featuring a high energy 213nm UV laser that can be integrated with any ICP-OES or ICP-MS.

New DigiLas III™ Software Features

- Enhanced, real-time control of energy, Helium flow and Z-focal point
- Fully editable methods with any combination of rasters, lines, points, etc.
- Draw and combine all methods into a single sequence
- Import from and export directly to MS Excel
- Easily save and recall sequences and sampling positions
- Flexible triggering options for easy sync and automation with the host detector



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