

# PRODUCTIVITY SERIES

BRING YOUR ANALYTICAL CHALLENGES TO OUR  
INTERACTIVE APPLICATIONS WORKSHOP

**collaborate** with the experts  
to **solve** your toughest analytical  
**challenges** at a city nearby!

1

ion chromatography and atomic spectroscopy

2

gas chromatography and GC/mass spectrometry

3

liquid chromatography and LC/mass spectrometry

**A Three-Track Learning Opportunity**  
*Feel free to move between tracks.*

## 2 gas chromatography and mass spectrometry

Join us to learn about the latest technological advances in scientific instrument design. Expand your laboratory's capabilities, improve sensitivity, and simplify method development. Learn how the design features of Thermo Scientific mass spectrometers enable them to be the best solution for your experimental insert comma after experimental research and routine analytical needs. Discover how the power of sample preparation automation can be fast, easy and inexpensive. Explore how extraction and instrument consumables can improve sample separation and detection, saving your laboratory money. The afternoon applications workshop will offer engaging presentations with a variety of topics available for discussion, including converting your GC and GC-MS from helium to hydrogen carrier gas for cheaper and faster separations, pesticide analysis by triple quadrupole GC-MS technology, and popular environmental, sample preparation, food safety and pharmaceutical applications.

### agenda

**8:00 am** Welcome and Continental Breakfast

**9:00 am** Select your track of interest – feel free to move between tracks

**9:00 am** Trusted Solutions for Reliable Gas Chromatography Analyses at Your Fingertips

Thermo Fisher Scientific has a complete portfolio from sample preparation to vials and closures to GC columns. We will explore all of the resources available to you and provide you with all the necessary tools to achieve repeatable, and predictable results, separation after separation.

**9:30 am** Eliminate Sample Prep Bottlenecks with the Power of Automation

This presentation will detail how performing extraction and concentration using the Thermo Scientific™ Dionex™ ASE™ Accelerated Solvent Extractor system, the Thermo Scientific™ Dionex™ AutoTrace™ 280 Solid-Phase Extraction instrument and the Rocket™ Evaporator will dramatically increase laboratory throughput. With the power of automation, complete extraction of both liquid, solid and semisolid samples saves you time, solvent and money.

**10:15 am** Break

**10:30 am** Introducing the Thermo Scientific TSQ 8000: Triple Quadrupole GC-MS/MS Making Complex MS/MS Analysis Simple

There is currently a surge of interest in GC-MS around the use of triple quadrupole analyzers for routine quantitation and confirmation. In particular, a popular application of this technology has become the screening of hundreds of target compounds in complex matrices. The interest in triple quadrupole mass spectrometers for this type of application is due to its excellent sensitivity, linearity and scan speed, combined with the unique selectivity against matrix enabled by MS/MS technology. While the selectivity benefit of MS/MS technology is clear, a need has arisen to make this relatively complex technique more accessible to laboratories that are too busy to spend weeks with method development and familiarization. To address this need, several tools have

been developed for the recently launched Thermo Scientific™ TSQ 8000™ Triple Quadrupole GC-MS to simplify MS/MS method development and daily operation. Examples of such tools range from AutoSRM, software that greatly simplifies MS/MS method development, to the complete methodology for the analysis of common target compounds. The tools developed for the TSQ 8000 MS that simplify complex MS/MS analysis will be presented using the comprehensive screening of pesticides as an application example.

**11:15 am** What's New with Thermo Scientific GC and GC-MS

The newest Thermo Scientific GC and GC-MS tools provide new possibilities for your laboratory. Discover the next level of instrument usability with the next generation GC with engineered miniaturized, instant connect plug-in injectors and detectors, redefining usability and flexibility in routine and high throughput laboratories. See how the Thermo Scientific™ TRACE™ 1300 Series GC is the most flexible gas chromatograph for your laboratory. Attendees will learn how the new Thermo Scientific™ TriPlus™ 300 Headspace Autosampler can provide sensitivity similar to more complex dynamic range purge and trap systems. The Thermo Scientific™ TriPlus RSH™ autosampler showcases new technology in sample handling, and moves beyond automated sample injections to more advanced tasks, such as dilutions for automated curve generation, sample derivatization and internal standard additions. Maximize your mass spectrometer's productivity and flexibility. Learn how you can tackle today's challenges with the advanced features of the Thermo Scientific™ ISQ™ Single Quadrupole GC-MS system with the innovative Thermo Scientific™ ExtractaBrite™ ion source which can be removed in its entirety and replaced in less than three minutes without venting the mass spectrometer. Learn about the newest innovations to dramatically improve your laboratory's gas chromatography and mass spectrometry needs.

**12:00 pm** Lunch

**1:00pm** Applications Workshop

**\*3:00pm** Informal Discussion and Wrap-up

See page 2-3 for the afternoon Interactive  
Applications Workshop abstracts

Discover new analytical technologies

**Thermo**  
SCIENTIFIC

A variety of  
Applications Workshop  
Topics available

Register today!

## 2 gas chromatography and mass spectrometry

### applications workshop topics

This interactive workshop will be driven by attendee preference. A variety of topics will be available for discussion including new software developments and demonstrations, sample preparation and GC troubleshooting, method development tips and tricks, and an overview of popular environmental, forensics, food safety and POP's applications.

#### Automated Solutions to Enhance Static Headspace Gas Chromatography Determinations (Pharmaceutical)

Static headspace is a widely used sampling technique for the analysis of volatile organic compounds in liquid and solid matrices by gas chromatography. This technique is accepted worldwide with a set of official norms regulating the determination of residual volatile species in environmental samples like water and soils, in consumer and pharmaceutical products, and in biological samples. With the always growing and challenging needs of laboratories in terms of throughput and sensitivity requirements, headspace instrumentation is constantly evolving. With minimal changes to the GC instrumentation, static headspace systems can provide sensitivity similar to more complex dynamic purge and trap analysis. The newest technology in sample handling, beyond automated sample injections, will also be covered. We will demonstrate more advanced tasks, such as dilutions for automated standard curve generation, internal standard additions and derivatization routines can ultimately improve the quality of data. In this seminar, data will be presented in the areas of the analysis of halogenated contaminants at ppt levels in drinkable water, as well as high-throughput forensic, pharma and material characterization analyses run by means of static headspace.

#### From Helium to Hydrogen: GC-MS Case Study on SVOCs in Water (Environmental)

The analysis of semi-volatile organic compounds (SVOCs) in wastewater by United States Environmental Protection Agency (U.S. EPA) Method 8270 involves identification and quantitation of more than 120 analytes of varying chemical structure, polarity and volatility. The diversity of the analytes in this method, along with specific DFTPP tune requirements, presents particular challenges when migrating from helium to hydrogen carrier gas. We will present and compare data of fast GC-MS analysis of SVOCs performed in accordance with EPA Method 8270 on the TRACE 1310 GC coupled to an ISQ single quadrupole mass spectrometer utilizing helium and hydrogen carrier gases. Key modifications to both GC and MS set up in hardware and methods necessary for successful migration to hydrogen carrier gas will be discussed, and the effect of each parameter on the data quality will be demonstrated. The final, optimized, and validated EPA Method 8270 fully migrated to hydrogen carrier gas with improved peak shape, resolution, run time, and sensitivity will be presented.

#### Pesticide Determination Challenges in Food Products with Triple Quadrupole GC-MS (Food Safety)

Triple quadrupole mass spectrometers provide your laboratory with the ability to analyze and confirm in full scan and selected reaction monitoring (SRM). Full scan in the triple quadrupole works just like the single quadrupole. SRM adds the ability to analyze to even lower detection limits in heavy matrix. Your lab can take advantage of this in several ways. A smaller sample size can be used to reach the same detection limit, saving money and giving your lab an analytical advantage. In this presentation, we will demonstrate the use of the Thermo Scientific GC-MS triple quadrupole mass spectrometers for challenging food safety analyses. The TSQ 8000 GC-MS/MS provides lower detection limits and flexibility to your laboratory with full scan, SRM, and alternating Full Scan/SRM. The Thermo Scientific™ TSQ Quantum™ XLS Ultra GC-MS/MS provides even greater sensitivity and a second level of specificity, above any other GC-MS/MS triple quadrupole. By isolating at 0.1 amu prior to the second quadrupole, this system can provide even lower detection limits for challenging priority pollutant analyses.



Thermo Scientific TRACE 1310 GC



Thermo Scientific ISQ  
Single Quadrupole GC-MS



Thermo Scientific TRACE 1310 GC - TSQ 8000  
MS/MS (with TriPlus RSH autosampler)

Discover new analytical technologies

To view the complete agenda, abstracts and extended list of applications for customizing your workshop visit

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This is a **FREE** event!

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A variety of  
Applications Workshop  
Topics available

Register today!

## 2 gas chromatography and mass spectrometry

### Smart Software Solution for GC and GC-MS Systems

Join us for an informative session introducing the Thermo Scientific™ TraceFinder™ software package. TraceFinder software offers market-specific variants for GC and GC-MS analysis. In addition to providing a unified software platform, TraceFinder software offers a variety of productivity enhancements including a simplified compound database and an optional intelligent sequencing module. An overview of TraceFinder software will be presented illustrating the impressive power of the software. The Thermo Scientific™ Dionex™ Chromeleon™ Chromatography Data System (CDS) software will allow you to apply the superior data processing and automation capabilities to routine GC operation - ultimately boosting your lab's productivity and increasing the quality of your analytical results.

### EPA Methods 524.2, 524.3 and 8260 Volatiles Analysis by Purge and Trap and GC-MS Analysis (Environmental)

Volatile Organic Compounds (VOC) are toxic environmental pollutants that can be dangerous to the earth, animals and the immune systems of adults and children, and some have been proven to be carcinogenic. These low boiling point compounds are regulated by the United States Environmental Protection Agency (U.S. EPA) in EPA methods 524.2, 524.3 and 8260. Discover exciting new Volatile Organic Compounds (VOC) are toxic environmental pollutants that can be dangerous to the earth, animals and the immune systems of adults and children, and some have been proven to be carcinogenic. These low boiling point compounds are regulated by the United States Environmental Protection Agency (U.S. EPA) in EPA methods 524.2, 524.3 and 8260. Discover exciting new instrumental analysis methodology to detect these compounds by purge and trap sample introduction, and fast chromatography and detection by the TRACE 1310 GC and ISQ mass spectrometer. We also explore and demonstrate the use of alternate purge and carrier gases to further decrease the time of analysis and cost in the laboratory. Improve method detection limits, speed of analysis, and confidence in results.

### In-Cell Clean-up: Remove Unwanted Co-extractables in the ASE Extraction Cell (Sample Throughput)

Learn how the unique flow-through design of the ASE system allows for the automatic removal of interferences as the sample is extracted. No more need for manual post-extraction clean up!

### Automated SPE for EPA Method 525.2: Using AutoTrace 280 for the Extraction of Semi-Volatiles from Water Samples (Environmental)

Learn how the AutoTrace 280 SPE can replace separatory funnel and continuous liquid-liquid extraction giving faster, more precise results using less than half the solvent.

### The Importance of Choosing the Correct Autosampler Vial! (Case Study)

We will discuss a case study of pyrethroid pesticide. In this study, we will explore how the autosampler vial material impacted the ability to detect low concentration levels of these insecticides by GC-MS.

### Selecting Your GC Consumables for Optimum System Performance in POPs Analysis

Selecting the correct GC consumables for your system in order to get optimum performance can be challenging, particularly for critical separations such as the analysis of Persistent Organic Pollutants (POPs). This presentation will discuss how to select system components such as liners, ferrules and syringes so that you get the best performance from your GC system



Dionex ASE 350  
Accelerated Solvent Extractor system



Chromeleon Chromatography  
Data System software

Discover new analytical technologies

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