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106th Meeting

*2010 Program
October 12 - 13, 2010
Galveston Island, Texas*

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2010 Conference Schedule

Monday October 11, 2010

11:30 AM Lunch
12:30 PM Shotgun Start
Gulf Golf Tournament
Moody Golf Course

Golf Awards Night

7:00 - 10:00 PM
Moody Gardens Hotel - Moody Ballroom

Tuesday October 12, 2010

9:00 AM Gulf Oil Spill Symposium

8:15 AM Fuel Rating Symposium 2010

8:30 AM -5:00 PM
Technical Sessions
Exhibits

New Product Showcase - 11:30 AM - 1:00 PM - Exhibit Hall Center

5:00 PM - 6:00 PM
Vendor Meeting
Floral Hall A

Wednesday October 13, 2010

10:00 AM Gulf Oil Spill Symposium

8:45 AM Fuel Rating Symposium 2010

8:30 AM - 5:00 PM
Technical Sessions
Poster Sessions
Exhibits

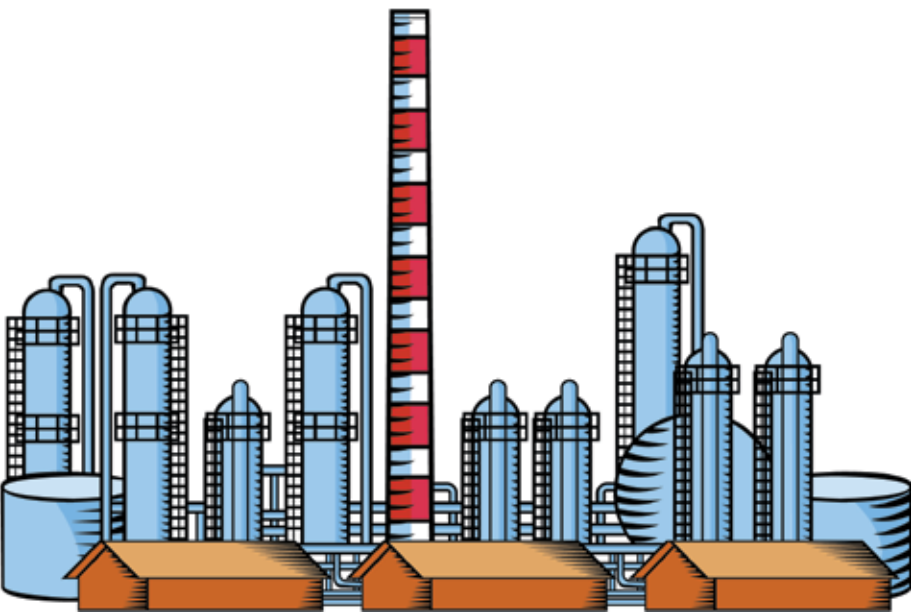
New Product Showcase - 11:30 PM - 1:00 PM

Thursday October 14, 2010

Fuel Rating Symposium 2010 - Regional Meetings
9:00 AM - 1:00 PM

PANalytical Annual Gulf Coast X-ray User Group Meeting
9:00 AM - 4:00

Thermo Fisher "Gulf Coast Refining & Petrochemical Day"
9:00 AM - 3:00 PM



Gulf Coast Conference Program

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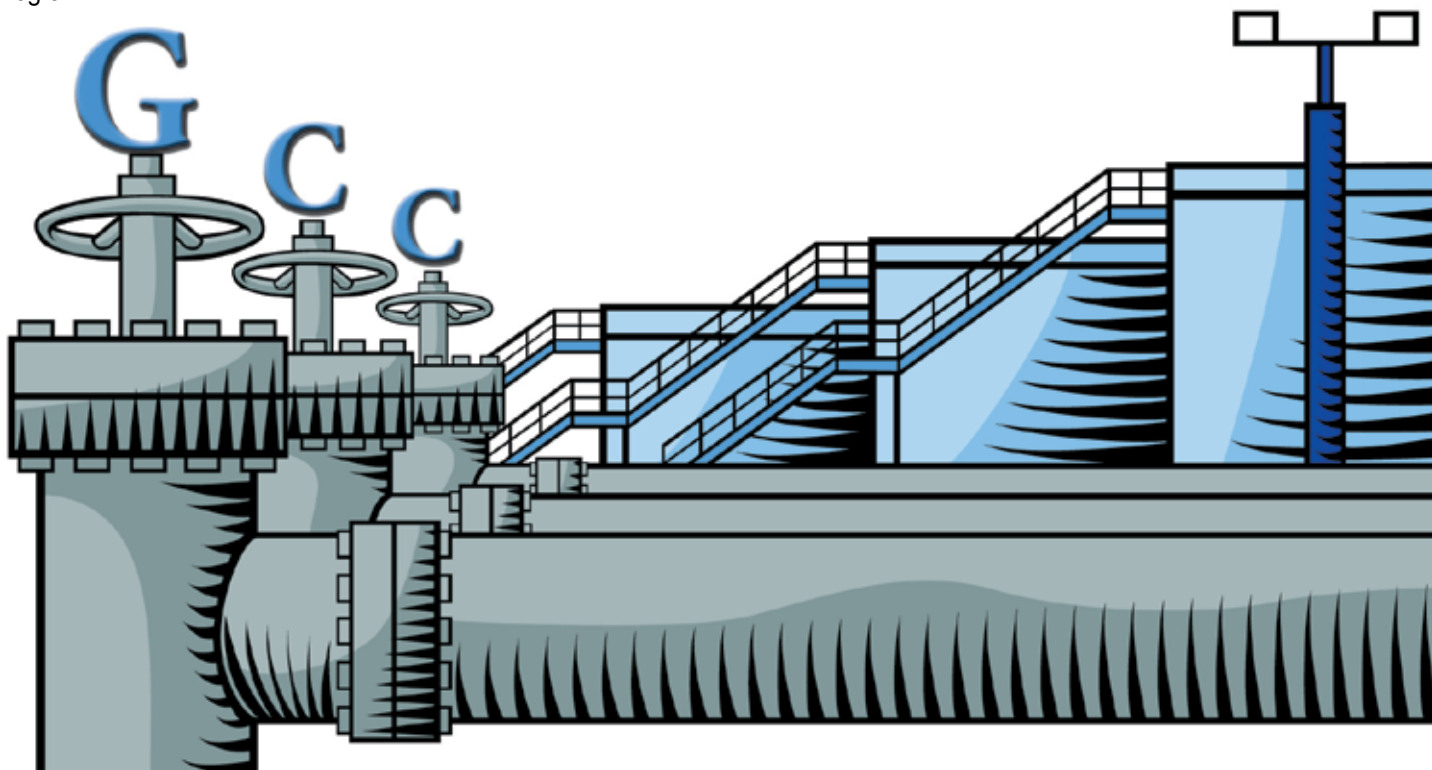
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Submissions for publication are encouraged and should be sent to the Editor at the above addresses. Advertising rates, material requirements, deadlines, etc. should be addressed to the above addresses as well.

POSTMASTER: Send address changes to: **The Gulf Coast Conference Program**, 14090 FM 2920, Suite G-146 Tomball, TX 77377

Mission Statement

“To provide GCC attendees with news, technical & business information which will educate about the petrochemical, refining, environmental, and industrial hygiene fields and professions.” The Gulf Coast Conference program will focus on the industry trends and news, regulatory activities, technical information, and the successful implementation of various technical & business methodologies important to those professions. Conference business, events and activities will also be communicated. -- Opinions, claims, conclusions and positions expressed in this publication are the authors’ or persons quoted and do not necessarily reflect the opinions of the editor, GCC or the Gulf Coast Conference Program.





Notes from the rolltop...

Welcome to the 2010 Gulf Coast Conference Program! . This program reflects our industry's current developments, progress, and achievements toward advancing the science of chemical analysis. You will again find new and innovative methods, techniques, and processes at the 2010 GCC, as well as refinements to older solutions which will help resolve old problems for many of you.

The total technical program for 2010 is outstanding and the largest in a decade! The addition of the Fuel Ratings Symposium to our program brings a new dimension to our meeting and GCC would like to welcome all of the new attendees this Symposia brings. We certainly want to thank Jim Hepp from Compass Instruments for all of his hard work and initiative in bringing this fine organization to "co-locate" with GCC this year. We are hopeful the group will have a productive and cost effective meeting and will see fit to work with us again in the future.

Recent events in the Gulf of Mexico this year have also brought GCC new challenges and opportunities. The spill has been a significant hardship to all of the people along the Gulf Coast and impacted the environment, industry, and future of all that work, play and live up and down the coast. As a result of our charter and mission as a source of education and information to the Petrochemical, Refining, and Environmental fields, we initiated a new Symposium dedicated to the Gulf Oil Spill. This technical section of GCC will this year be chaired by Dr. Ed Overton, Professor Emeritus at LSU. The contributions to this section are significant and may help define analysis, methods, and strategic approaches to this spill for years to come.

International and national news media have expressed interest in our meeting this year as a result of the Gulf Oil Spill Symposium and we expect some "live" coverage from the conference.

Consistent improvement is always a goal, and this years GCC will not be an exception. Based upon suggestions of our vendor community, we are continuing the format begun last year to allow for a more focused technical group of presentations and in a more compact time frame. Consequently, the technical meeting will be a very full two days. To accommodate this change and in an effort to provide a more reasonable technical schedule and allow each of you the opportunity to attend more technical sessions, yet still have ample time to visit the sponsoring vendors, the GCC has adapted a different scheduling format. We will have more simultaneous sessions for you to choose from for attendance, yet still have more breaks to allow for vendor interaction and exhibition hall visits. During the lunch hour on Tuesday and Wednesday, attendees and exhibitors all will be provided food in the exhibit hall through the generous and exclusive sponsorships of Chemplex Industries, Inc. and Analytical Services, Inc. on Tuesday and Thermo Scientific, Intertek, PAC, and Perkin Elmer on Wednesday.

Every exhibiting vendor at the GCC makes a significant investment and contribution toward the production of a quality meeting every year. Whether it is a group of new businesses joining together to share a booth, a single new technical idea for presentation in the technical session, or a large mega company displaying their newest innovations, the exhibiting vendors are the bedrock of the conference. Without this support, there would be no meeting, and the organizers of the meeting sincerely appreciate the efforts of all. This level of support and commitment by all will help to advance the GCC as the "best in class" conference for technical exchange in the petrochemical, refining, and environmental business place.

Some highlights for the 2010 meeting:

Multi-dimensional Separations Symposium - The event this year has again been organized by Bill Winniford and Kefu Sun of Dow Chemical Company. They have brought together an outstanding group of contributors to present and discuss the latest efforts and improvements in this field, and presenters from industry, academia, and vendors will be discussing this ever growing field.

New Product Showcase (NPS) - The 6th annual NPS will provide a central location in the center of the exhibit hall for selected vendors to show off and demonstrate their latest and newest advances in products, software, and methods. For 1 1/2 hours each on Tuesday and Wednesday of the meeting, you are asked to stop by this special exhibit area and review what you see. Significant awards will be given to those vendors selected as "Best in Class" and for the reviewers (you) a special Lifetime GCC Conference Registration will be given to one individual randomly chosen from completed review forms (available through our volunteers in charge of the NPS). We are asking that you fill these forms out with your opinions. This will be helpful to the exhibiting vendors and perhaps provide new information for you and your company regarding new capabilities.

Gulf Oil Spill Symposium - We have replaced the "Presenter of the Year" discussion with the Gulf Oil Spill Symposium this year. The sheer size of the symposium and the time and room requirements dictated this change. We will consider re-implementing the POTY in the future.

Join us this year. Whether this will be your first GCC or your 30th, whether you are a lab tech, chemist, engineer, lab or plant manager, the "New Idea Machine" of the Gulf Coast Conference will be the premier place for education and innovation in your field. Register today with the form found across from this page or on-line at www.gulfcoastconference.com

See you in October!

Bob Kibler
President
Gulf Coast Conference



2010 Registration Form

October 12-13, 2010
Moody Gardens Hotel & Convention Center

Please send the completed form and a check for \$95.00
made payable to [Gulf Coast Conference](#)
or fill out MasterCard/VISA/AMEX/Discover information below & send to:

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- I want to attend Papers and Exhibits (\$95.00)
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- Check Enclosed with the Application (Registration will only be complete upon receipt of payment)
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Cardholder Signature: _____

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Register Online at www.gulfcoastconference.com

New Product Showcase

The 2010 Gulf Coast Conference will again sponsor the New Product Showcase event to provide a forum for the introduction of new technology and innovation to our attendees. On Tuesday and Wednesday of the meeting from 11:30 AM - 1:00 PM there will be special table top displays with new products and technology for your examination. Several vendors will provide these products and personnel to describe them during these specific times in the central section of the Exhibit Hall.

We are asking all Attendees to stop by and take a look at these products and complete an opinion survey about what you see. One survey will be drawn on Wednesday afternoon from the completed surveys and that person will receive a LIFETIME registration to the Gulf Coast Conference!

The GCC will appreciate your participation, and we know that the participating vendors will as well!



Just some of the participants in the 2010 New Product Showcase!

2010 CONFERENCE SCHEDULE

Tuesday Session - October 12, 2010

Floral Hall A

Gulf Oil Spill Symposium - A timely and relevant 2-day forum for the presentation of work associated with the analytical challenges associated with the event and its impact. Chaired by Dr. Ed Overton - Professor Emeritus of Environmental Sciences at LSU's School of the Coast & Environment.

9:00 AM - Welcome & Introduction - Bob Kibler - President, Gulf Coast Conference

"Oil Spill Chemistry"

Ed Overton - Symposium Chair and Professor Emeritus of Environmental Sciences in LSU's School of the Coast & Environment - Paper Presentation - 20 minutes - 9:10 AM - Tues Abstract # 180

"Advanced Analytical Technologies for Analyzing Environmental Matrixes Contaminated with Petroleum Hydrocarbons"

James D. McCurry, Michael Szelewski, and Joni Stevens - Agilent Technologies
Paper Presentation - 30 minutes - 9:30 AM - Tues Abstract # 076

"Sampling and Analytical Parameters for the Monitoring of Petroleum Air Toxics Using Automated Thermal Desorption/Gas Chromatography/Mass Spectrometry (ATD/GC/MS)"

Lee Marotta, Miles Snow, and Heidi Grecsek - PerkinElmer ASLS
Paper Presentation - 30 minutes - 10:00 AM - Tues Abstract # 148

"Wasson-ECE Air Concentration System for EPA Method TO-15"

Brenda Smith, Marcie Glass - Wasson-ECE Instrumentation
Paper Presentation - 30 minutes - 10:30 AM - Tues Abstract # 118

"Field Screening by GC/MS and Standoff FTIR of Multiple Sample Types During The Gulf Oil Spill"

Bob Kibler, Franziska Lange, Cindy Carey - Bruker Detection Corporation
Paper Presentation - 30 minutes - 11:00 AM - Tues Abstract # 147

"The Extraction of Glycols From Water Using ENVI-Carb Plus Solid Phase Extraction Cartridges"

L.M. Sidisky, K. K. Stenerson, M. McCoy, J. Brown, W.R. Betz, M. J. Keeler - Sigma-Aldrich / Supelco
Paper Presentation - 20 minutes - 11:30 AM - Tues Abstract # 123

"Fast and Accurate GC/MS Testing for EPA and EU Polycyclic Aromatic Hydrocarbons (PAHs) for Food and Environmental Applications, GC column Choices and Method Optimization"

Johan Kuipers and John Oostdijk - Agilent Technologies, The Netherlands
Paper Presentation - 30 minutes - 1:00 PM - Tues Abstract # 109

"Rapid Techniques for the Analysis of PAHs in Mussel Tissue (*Mytilus edulis*): QuEChERS Extraction and Direct Analysis by GC/MS/MS"

Ed George - Bruker Chemical Analysis
Presentation - 20 minutes - 1:30 PM - Tues Abstract # 144

"Overcoming The Bottlenecks In Marine Tissue Analysis Through Improved Sample Preparation"

David E. Knowles, Bruce E. Richter, Richard E. Carlson, Brett J. Murphy - DIONEX
Paper Presentation - 30 minutes - 1:50 PM - Tues Abstract # 072

"Development of a High-Throughput GCxGC Method for the Analysis of Water and Seafood Samples"

J.-M. D. Dimandja, J. Mitchell, A. Parker, N. Chamkasem, S. Pratt, V. Vega, T. Harmon, L. Mitchell - Spelman College
Paper Presentation - 20 minutes - 2:20 PM - Tues Abstract # 159

"The QuEChERS Approach with GC- and GCxGC-TOFMS for Determining PAHs in Seafood after the Gulf Oil Spill"

Jack Cochran, Jason Thomas - Restek Corporation
Paper Presentation - 30 minutes - 2:40 PM - Tues Abstract # 029

“Studies on the Potential Environmental Impacts of Crude Oil and Dispersant Mixtures”

Todd Anderson - Texas Tech University

Paper Presentation - 20 minutes - 3:10 PM - Tues Abstract # 143

“Detection and Identification of Dispersants (Corexit 9527 and Corexit 9500) by GC/MS and LC/MS/MS”

Kory Kelly, Sky Countryman, Ngoc Nguyen, Terrell Matthews - Phenomenex, Inc.

Workshop Presentation - 30 minutes - 3:30 PM - Tues Abstract # 112

“CLEANMAG: The Magnetic Sorbent Approach Against Waterborne Oil Spills”

G. Nicolaides and G. Zombanakis - CLEANMAG S.A. and Nibioservices Inc.

Paper Presentation - 30 minutes - 4:00 PM - Tues Abstract # 119

Bluebonnet

“Waters Corporation Workshop”

Suzanne Decatur - Waters Corporation

Workshop Presentation - 1 Day - 9:00 AM - Tues Abstract - #014

Daffodil

“Troubleshooting (Petro)chemical Applications by Reading the Chromatograms”

Jaap de Zeeuw - Restek Corporation

Seminar Presentation - 90 minutes - 9:00 AM - Tues Abstract # 012

“Determination of Ethanol Content of Denatured Fuel Ethanol by Infrared Spectroscopy - A Twenty Second Alternative Test to a Forty Minute GC Analysis”

Larry Spino, Pat Ritz - PAC

Presentation - 40 minutes - 10:30 AM - Tues Abstract # 070

“Meeting Water and Environmental Regulatory Requirements with a LIMS Solution”

Jeanne Mensingh - EM2 Solutions

Presentation - 30 minutes - 11:15 AM - Tues Abstract #186 - Daffodill Room

“PPM Level Biodiesel Detection with a Portable Analyzer”

Sandy Rintoul - Wilks Enterprise, Inc.

Paper Presentation - 20 minutes - 1:00 PM - Tues Abstract # 026

“Rapid Analysis of Jet Fuel Using a Portable Near-Infrared Analyzer”

George Zombanakis, Christopher Larkin - Bruker Optics

Paper Presentation - 20 minutes - 1:20 PM - Tues Abstract # 125

“Raman Spectroscopy Monitoring for Control of Benzene Levels in Gasoline Products (MSAT)”

Lee Smith, Rory Uibel, and Robert Benner - Process Instruments

Paper Presentation - 20 minutes - 1:40 PM - Tues Abstract # 011

“Parameter Selection and Optimization in IR and Raman Spectroscopy” Part I

Dean Brown - PerkinElmer

Workshop Presentation (Part I) - 60 minutes - 2:00 PM - Tues Abstract # 067

“Mid-IR, Near-IR, Raman Spectroscopy: Which technique to choose for my application” Part II

Dean Brown - PerkinElmer

Workshop Presentation (Part II) - 60 minutes - 3:00 PM - Tues Abstract # 073

“Low-level Elemental Impurity Analysis in High Dissolved Slids Brine Samples Utilizing Simultaneous Axial ICP-OES Detection”

Steve Wall, Patrick Simmons and Doug Schrader - Agilent Technologies

Paper Presentation - 30 minutes - 4:00 PM - Tues Abstract # 185

Hibiscus

“XRF PETRO PRIMER - What YOU Need to Know to Use XRF for PETROCHEMICAL Analysis”

Al Martin, Thermo Scientific Instruments - Alexander Seyfarth, Bruker Elemental Inc.- Charles Wu, University Of Western Ontario London

Training Course - 3 hours - 9:00 AM - Tues Abstract # 091

“New X-ray Technology to Measure Low Sulfur Concentrations”

Michael C. Pohl, David Malone, Rudy Haas - Horiba Instruments

Paper Presentation - 30 minutes - 12:30 PM - Tues Abstract # 010

“News on the Ultra low Sulfur determination with WD XRF!”

Alexander Seyfarth, Larry Arias Bruker AXS Inc. Monte Solazzi Chemplex Inc., Nick Morton Oklahoma University

Paper Presentation - 30 minutes - 1:00 PM - Tues Abstract # 088

“Ultra Low Level Sulfur Analysis in Petroleum Products using the Axios Petro Wavelength Dispersive X-ray Spectrometer and D2622-2010”

David G. Coler, Kimberly B. Halkiotis and Gregory L. Wortman – PANalytical

Paper Presentation - 20 minutes - 1:30 PM - Tues Abstract # 164

“The Axios 1KW Wavelength Dispersive XRF and its Capabilities for the Analysis of Fuels, Lubricating Oils and Polymers”

Gregory L. Wortman, David G. Coler, and Kimberly B. Halkiotis - 30 minutes

Paper Presentation - 30 minutes - 1:50 PM - Tues Abstract # 163

“New X-Ray Fluorescence (XRF) designs for Petroleum and Polymer Challenges”

Al Martin - Thermo Fisher Scientific

Paper Presentation - 30 minutes - 2:20 PM - Tues Abstract # 025

“Determination of Metals in Paints, Substrates and On Various Work Surfaces - A New Generation of Certified Calibration Materials”

John B. Sardisco, PhD., Keith A. Johnson, John S. Cooke - Analytical Services, Inc.

“New XRF Based Analytical Techniques Offer Sub ppm Detection Limits in Hydrocarbon Matrices”

Berry Beumer, Zewu Chen, Leslie Johnson - XOS

Paper Presentation - 30 minutes - 2:50 PM - Tues - Abstract # 184

“Advances in EDXRF for Elemental Analysis of Soils and Effluents”

Scott Fess - Applied Rigaku Technologies, Inc.

Paper Presentation - 20 minutes - 3:20 PM - Tues Abstract # 182

“Analysis of Low Levels of Phosphorous in Gasoline Using the Axios mAX Advanced Wavelength Dispersive XRF”

David G. Coler., Kimberly B. Halkiotis and Gregory L. Wortman – PANalytical

Paper Presentation - 20 minutes - 3:40 PM - Tues Abstract # 156

“Analysis of Catalysts and Zeolites by WDXRF Using a Wide-Ranging-Oxide Application”

Gregory L. Wortman, David G. Coler, and Kimberly B. Halkiotis – PANalytical

Paper Presentation - 20 minutes - 4:00 PM - Tues Abstract # 155

“The Analysis of Particulate Matter on Air Filters using the Epsilon 5 Polarizing Secondary Target Energy Dispersive XRF”

David G. Coler., Kimberly B. Halkiotis and Gregory L. Wortman – PANalytical

Paper Presentation - 30 minutes - 4:20 PM - Tues Abstract # 162

“New X-Ray Fluorescence (XRF) Solutions for Elemental Analysis of Heavy Marine Fuel Oils”

Al Martin, Robert Hergenrader and Ravi Yellepeddi - Thermo Fisher Scientific

Paper Presentation - 30 minutes - 4:40 PM - Tues Abstract # 168

“Non-destructive Materials Identification using Finger-printing Analysis”

Kimberly Halkiotis, David Coler, Greg Wortman – PANalytical

Paper Presentation - 20 minutes - 5:10 PM - Tues Abstract # 161

Iris

“Expansion of ASTM D5186 for Analysis of Fatty Acid Methyl Esters in Diesel Fuel and Expansion of ASTM D6550 for Analysis of Olefins in High Boiling Petroleum Distillates”

Curt M. White - Waters Corporation

Paper Presentation - 30 minutes - 9:30 AM - Tues Abstract # 001

“Column Selection and Sample Introduction for Bio-Fuel Analysis”

Jaap de Zeeuw - Restek Corporation

Paper Presentation - 30 minutes - 10:00 AM - Tues Abstract # 005

“Characterization of Bio-source Materials and Fluids by GC with Infrared Detection”

Terry L. Ramus, Scott J. Hein and David A. Grudoski - Diablo Analytical, Inc.

Paper Presentation - 30 minutes - 10:30 AM - Tues Abstract # 080

“Real-time Direct MS Detection of Syngas Related Components for Rapid Process Characterization”

Terry L. Ramus and Scott J. Hein - Diablo Analytical, Inc.

Paper Presentation - 20 minutes - 11:00 AM - Tues Abstract # 085

“The Direct Analysis of Fatty Acids Found in Various Biomass Matrices Using Reactive Pyrolysis-GC/MS”

R.R. Freeman, Frontier Laboratories US, Antioch, CAA. Hosaka , T. Yuzawa and I. Watanabe, Frontier Laboratories, Koriyama, Japan

Paper Presentation - 30 minutes - 11:20 AM - Tues Abstract # 128

“Scientific Staffing- How Using A Specialized Staffing Agency Impacts Your Bottom-line”

Felicia Solomon - EM2 Solutions, Inc.

Workshop Presentation - 30 minutes - 1:00 PM - Tues Abstract # 122

“Effective Techniques to Solve Your Laboratory Nonconformances”

Gretchen Mc Auliffe - EM2 Solutions

Workshop Presentation - 60 minutes - 1:30 PM - Tues Abstract # 098

“Electronic Document Management Systems (EDMS) – Managing the Decision, Implementation, and Integration Process”

Jeanne Mensingh - EM2 Solutions, Inc.

Seminar Presentation - 30 minutes - 2:30 PM - Tues Abstract # 136

“Process Based Auditing in the Laboratory”

Gretchen Mc Auliffe - EM2 Solutions

Presentation - 60 minutes - 3:00 PM - Tues Abstract # 099

“Automation Audit”

Mike Arlitt - Baytek International

Paper Presentation - 30 minutes - 4:00 PM - Tues Abstract # 158

Orchid

“A New Generation in Process GC”

John Crandall - Falcon Analytical Carl Rechsteiner - Chevron Brian Rohrback – Infometrix

Paper Presentation - 60 minutes - 9:30 AM - Tues Abstract # 016

“Importance of Sulfur Heterocycles in Organic Chemistry - an Overview”

Cyril Parkanyi - Florida Atlantic University

Paper Presentation - 20 minutes - 10:30 AM - Tues Abstract # 008

“A Novel Approach for the Determination of Total Sulfur and Halogen Species by Combustion Ion Chromatography”

Dr. Jay Gandhi, Dr. Joerg Kleimann, Dr. Christian Emmeneger - Metrohm USA

Paper Presentation - 30 minutes - 10:50 AM - Tues Abstract # 027

“Expanding Horizons in Excimer UV Fluorescence”

Franek Olstowski - ATOM Instrument Corp.

Paper Presentation - 20 minutes - 11:10 AM - Tues Abstract # 075

“Which Pollutants can be Measured and Which Cannot”

Bob Davis - Airgas Inc.

Paper Presentation - 30 minutes - 1:00 PM - Tues Abstract # 002

“Quantitative Analysis of Environmental Air Contaminants using TSQ Series Mass Spectrometers in Mobile Laboratories”

Calin G. Znamirovski - Thermo Fisher Scientific

Paper Presentation - 30 minutes - 1:30 PM - Tues Abstract # 139

“Improving the Reliability of Analytical and Sampling Systems in Challenging and Corrosive Environments”

Gary Barone, Marty Higgins, David Smith - SilcoTek Corp.

Paper Presentation - 30 minutes - 2:00 PM - Tues Abstract # 028

“Atmospheric Pressure GC for Petrochemical Analysis”

Doug Stevens, Anthony Newton, Jordan Blodgett - Waters Corp.

Paper Presentation - 30 minutes - 2:30 PM - Tues Abstract # 097

“Detailed Hydrocarbon Analysis In 10 Minutes At The Parts Per Million Levels In Exhaust Gases”

Claudio M. Ceccarelli, Nelson Carvajal, Roberto I. Meneghini and Joaquin A. Lubkowitz - Separation Systems Keith L. Olsen, General Motors, Warren, Michigan

Paper Presentation - 20 minutes - 3:00 PM - Tues Abstract # 084

“Challenges of Using D7169 for the Simulated Distillation of Crude Oils in the Sulfur Mode”

Nelson Carvajal, Roberto Meneghini and Joaquin A. Lubkowitz - Separation Systems

Paper Presentation - 20 minutes - 3:20 PM - Tues Abstract # 079

“Simulated Distillation (D7169) Improved by Merging a DHA Front End Analysis by Gas Chromatography”

Terry Osenbach, Heidi Grecsek, and Lee Marotta - PerkinElmer, Inc.

Paper Presentation - 30 minutes - 3:40 PM - Tues Abstract # 086

Wisteria

“Quantitative Analysis of Phytoestrogen Compounds from Urine by Trap-and-Elute HPLC-ESI-MS”

Samuel H. Yang, Aaron A. Morgan, Kevin A. Schug* - University of Texas at Arlington

Paper Presentation - 20 minutes - 10:00 AM - Tues Abstract # 064

“Analysis of Semi-Volatile Organic Compounds (EPA Method 8270D) In Environmental Water Samples Utilizing a Solid Phase Extraction Disk and Carbon Cartridge”

Michael Ebitson, David Gallagher - Horizon Technology

Paper Presentation - 30 minutes - 10:30 AM - Tues Abstract # 132

“The Direct Analysis of Residual Bisphenol A, Pthalates and Brominated Fire Retardants in Consumer Products Using Thermal Desorption-GC/MS”

R.R. Freeman, Frontier Laboratories US, Antioch, CAA. Hosaka, T. Yuzawa and K. Odagiri, Frontier Laboratories, Koriyama, Japan

Paper Presentation - 30 minutes - 11:00 AM - Tues Abstract # 129

“Advances in Differential Scanning Calorimetry: Highlighting New Test Methods and Data Analysis”

Justin Lang, Peter Muller, and David Norman – PerkinElmer

Paper Presentation - 30 minutes - 11:30 AM - Tues Abstract # 068

“Pushing the Performance Envelope for the Trace Measurement of Elements in Hydrocarbon Streams”

Stan Smith - Perkin Elmer

Paper Presentation - 40 minutes - 1:00 PM - Tues Abstract # 059

“Characterization of Polyurethanes by Pyrolysis GC with Infrared Detection”

Terry L. Ramus and Scott J. Hein - Diablo Analytical, Inc.

Paper Presentation - 20 minutes – 1:40 PM - Tues Abstract # 082

“Analysis of Aviation Turbine Fuel Containing Synthesized Hydrocarbons”

Brandy Sausse, Scott Berkous – PAC

Paper Presentation - 60 minutes - 2:00 PM - Tues Abstract # 069

“Overview of Ionic Liquids with Petrochemical Samples”

Sidisky LM, Stenerson KK, Ni Y, Baney GA, Desorcie JL, D.W. Armstrong - Sigma-Aldrich/ Supelco

Seminar Presentation - 60 minutes - 3:00 PM - Tues Abstract # 117

Ivy I & II Moody Gardens Hotel

Fuel Rating Symposium 2010

Key Note Address "Technology in IC Engines, Future Fuels, and the Impact on the Fuel Rating Industry"

Jeff Bizub – DresserWaukesha

Paper Presentation - 60 minutes - 9:00 AM - Tues Abstract # 043

"The Physics of Octane and Cetane Measurements"

Robert Legg, Southwest Research, Inc.

Paper Presentation - 30 minutes - 10:00 AM - Tues Abstract # 034

"Tools of the CFR Trade"

Tom Kosik - Alberta Innovates

Paper Presentation - 40 minutes - 10:30 AM - Tues Abstract # 041

"ESD Online Octane Rating System using the Falling Level Method"

Harry Rueckel (ESD), Walter Wulczak (ESD)

Paper Presentation - 30 minutes - 11:15 AM - Tues Abstract - # 031

"Rating Fuels by the Dynamic Falling Level, Operation and Maintenance"

Antonio Trinidad (Valero), Manuel Garbalena (Valero)

Paper Presentation - 60 minutes - 1:00 PM - Tues Abstract # 051

"Detailed Mid-FTIR Analysis Of Gasoline, Diesel & Jet Fuel With A Single Portable Analyzer In Seconds"

Philipp Jordan - Eralytics GmbH

Paper Presentation - 60 minutes - 3:00 PM - Tues Abstract # 053

"Analysis of Aviation Turbine Fuel Containing Synthesized Hydrocarbons"

Brandy Sausse (PAC), Scott Berkhou (PAC)

Paper Presentation - 30 minutes - 4:00 PM - Tues Abstract # 030

Vine I & II Moody Gardens Hotel

Fuel Rating Symposium 2010

"Independent Calibration of the Derived Cetane Number Instrument CID-510 and the Affects of Moisture"

Scott Berkhou (PAC), Pat Ritz (PAC), Thomas Herold (PAC)

Paper Presentation - 40 minutes - 10:15 AM - Tues Abstract # 032

"Exchange Group Data Services"

Tom Bell, Exchange Group Data Services

Paper Presentation - 30 minutes - 11:15 AM - Tues Abstract # 039

"Advanced Engine Technology Ignition Quality Tester (IQTTM)"

Tom Bell - Exchange Group Data Services

Paper Presentation - 60 minutes - 1:00 PM - Tues Abstract # 038

"The Easy Way, or the Right Way"

Thomas Jones - Compass Instruments, Inc.

Paper Presentation - 60 minutes - 2:00 PM - Tues Abstract #049

"CFR Engine Maintenance -Cooling System"

Mike Brunett - Compass Instruments, Inc.

Paper Presentation - 30 minutes - 3:00 PM - Tues Abstract # 048

“CFR Engine Maintenance - Cetane”
Dan Bemis – DresserWaukesha
Paper Presentation - 30 minutes - 3:30 PM - Tues Abstract # 047

“XCP -The Next Generation of CFR Control Systems”
Jeff Balis – DresserWaukesha
Paper Presentation - 60 minutes - 4:00 PM - Tues Abstract # 045

Wednesday Session - October 13, 2010

Floral Hall A

Thermo Seminar Series

“New Evolution UV-Vis Products and Gulf Coast Applications”
Ed Zalkovsky - Thermo
Paper Presentation - 20 minutes - 9:10 AM - Wed Abstract# 169

“Unstoppable Productivity, Unmatched Performance: The ISQTM Single Quadrupole GC/MS”
Jim Edwards – Thermo
Paper Presentation - 30 minutes - 9:30 AM - Wed Abstract # 170

“Mass Spec Advances for the Gulf Coast Gas Chromatographer”
Jim Edwards and Don Clay - Thermo
Paper Presentation - 30 minutes - 10:00 AM - Wed Abstract # 171

“A Comparison of Porous Layer Open Tubular (PLOT) Columns for the Separation of Refinery Gases”
Robert Wiedemer and Scott Adams - Thermo Scientific
Paper Presentation - 30 minutes - 10:30 AM - Wed Abstract # 172

“Trace Elemental Analysis of Environmental and Petrochemical Samples: From Optimized Sample Introduction for ICP to Utilizing Collision Cell Technology and Speciation ICP-MS”
Mike Plantz – Thermo
Paper Presentation - 45 minutes - 11:00 AM - Wed Abstract # 173

Thermo Seminar Series - “Handheld MIR, NIR and Raman Spectrometers”
Cam Macisaac – ThermoScientific
Paper Presentation - 45 minutes - 1:10 PM - Wed Abstract # 015

“FCC Catalyst Screening and Characterization by X-Ray Fluorescence (XRF)”
Robert Hergenrader, Al Martin and Ravi Yellepeddi – Thermo
Paper Presentation - 30 minutes - 2:00 PM - Wed Abstract # 174

“New X-Ray Fluorescence (XRF) designs for Petroleum and Polymer Challenges”
Al Martin, Robert Hergenrader and Ravi Yellepeddi - Thermo
Paper Presentation - 30 minutes - 2:30 PM - Wed Abstract # 175

“The Detection of Nitrogen, Sulfur and Halogens in LPGs and Gases and The Implications of New International Marine Fuel Legislation on the Analysis of Nitrogen and Sulfur in Heavy Hydrocarbons”
Marco van Aken - Thermo
Paper Presentation - 30 minutes - 3:00 PM - Wed Abstract # 176

Bluebonnet

Gulf Oil Spill Symposium - Day 2

“The Detection of Oil and Grease in Seawater by EPA Method 1664A”
Michael Ebitson, David Gallagher - Horizon Technology
Paper Presentation - 30 minutes - 10:00 AM - Wed Abstract # 134

“Oil/Grease In (Sea) Water – Portable & CFC-Free A New Mid-IR Laser Based Analyzer for Total Petroleum Hydrocarbons in Water”
Wolfgang Ritter, Bernhard Lendl, Michael Strassl - QuantaRed Technologies GmbH
Workshop Presentation - 60 minutes - 10:30 AM- Wed Abstract # 141

“On-site Oil and Grease Measurements in Water and Soil”

Sandy Rintoul, Dylan Wilks - Wilks Enterprise, Inc.
Paper Presentation - 20 minutes - 11:30 AM - Wed Abstract # 096

“Using Automated Solid Phase Extraction to Aid in the Detection of Poly-Aromatic Hydrocarbons in Seawater”

Michael Ebitson, David Gallagher - Horizon Technology
Paper Presentation - 30 minutes - 1:00 PM - Wed Abstract # 135

“Practical Considerations in the Analysis of Gasoline and Diesel Range Organic Components in Sand and Sea Water by Gas Chromatography”

Leeman Bennington, Heidi Grecsek, and Andrew Tipler – PerkinElmer
Workshop Presentation - 30 minutes - 1:30 PM - Wed Abstract # 142

“Fast Polynuclear Aromatic Hydrocarbons (PAHs) by Single Quadrupole GC/MS”

Lee Marotta, Leeman Bennington, Heidi Grecsek - PerkinElmer ASLS
Paper Presentation - 30 minutes – 2:00 PM - Wed Abstract # 177

“Analysis of Gasoline Range Organics (GRO) in a Variety of Matrices Using Multiple Sample Preparations Techniques and Detection Schemes”

Tammy Rellar, Roger Bardsley, Nathan Valentine, Tayler Trent, Tom Hartlein - Teledyne Tekmar
Paper Presentation - 30 minutes - 2:30 PM - Wed Abstract # 131

“High Efficiency PAH Analysis of Seafood from the Gulf of Mexico by UHPLC”

Jason Weisenseel, Wilhad Reuter, William Goodman - PerkinElmer, Inc.
Paper Presentation - 20 minutes - 3:00 PM - Wed Abstract # 087

Daffodil

Dionex Seminar Series - AM

“eWorkflows: Streamlining Workflows in Chromatography Laboratories”

Jawad Pashmi - Dionex
Seminar Presentation - 30 minutes - 9:00 AM - Wed Abstract # 137

“UHPLC Focused+: Dionex Now Offers UHPLC Performance at Standard HPLC Costs”

Jawad Pashmi – Dionex
Seminar Presentation - 30 minutes - 9:30 AM - Wed Abstract # 145

“Capillary Ion Chromatography”

Kirk Chassaniol – Dionex
Paper Presentation - 30 minutes - 10:00 AM - Wed Abstract # 150

“Automatically Remove Matrix Interferences for Better Performance in Many IC Applications”

Kirk Chassaniol - Dionex
Paper Presentation - 30 minutes - 10:30 AM - Wed Abstract # 149

“An Automated Multi-channel SPE for Oil and Grease Analysis”

David E. Knowles, Bruce E. Richter, Richard E. Carlson, Brian C. Dorich, Eric S. Francis, Brett J. Murphy – Dionex
Paper Presentation - 30 minutes - 11:00 AM - Wed Abstract # 152

“IC/HPLC Users Group Panel Discussion”

Kirk Chassaniol, Jawad Pashmi, Dave Knowles, Chuck Costanza, Lisa Lenehan - Dionex Corp
Users Group Meeting - 45 minutes - 11:30 AM - Wed Abstract # 100

“Rapid Payback on On-site Hydrogen Generation Demonstrated at International Flavors and Fragrances”

Stephen Toth, Research Scientist for International Flavors & Fragrances, and John Speranza, vice president for Proton Energy Systems
Paper Presentation - 30 minutes - 1:00 PM - Wed Abstract # 089

“Baytek International’s User Group Meeting at the Gulf Coast Conference”

Jonathan Richter - Baytek International
User Group Meeting - 3 hours - 2:00 PM - Wed Abstract # 153

Hibiscus

“Breakthrough Hyphenated Techniques for Polymer Characterization: DSC-Raman, TGA-MS, TGA-GC-MS, and TGA-IR”

Peter Muller, Justin Lang, David Norman - PerkinElmer, Inc.
Paper Presentation - 45 minutes - 9:15 AM - Wed Abstract # 062

Polymer Characterization Workshop

“A New Approach to Quality Control of Polyols through Titration”

Tore Fossum - Mettler Toledo, Inc.
Workshop Session - 20 minutes - 10:00 AM - Wed Abstract # 095

“New Breakthroughs in Analytical Characterization of Polymeric Systems from Formulation Through High Speed Processing”

Tore Fossum, Michael Ferraco, Michael Zemo - METTLER TOLEDO, INC.
Workshop Presentation - 60 minutes - 10:20 AM - Wed Abstract # 160

“Effect of Temperature and Flow Rate Changes on Molecular Weight Accuracy and Precision of the EcoSEC GPC System”

Caitlyn Sun - Tosoh Bioscience LLC
Workshop Presentation - 30 minutes - 11:20 AM - Wed Abstract # 108

“GPC Analysis with Mass Sensitive Detectors - Viscometry and Light Scattering”

John A. McConville, Ian Herzberg - Brookhaven Instruments Corporation
Workshop Presentation - 45 minutes - 12:45 PM - Wed Abstract # 167

“Copolymer Characterization: Modern Methods Using Dual Detection and GPC-Viscometry via PSS WinGPC Unity Software and the Tosoh EcoSEC GPC System”

Michael Gray - Polymer Standards Service - USA Inc.
Workshop Presentation - 45 minutes - 1:30 PM - Wed Abstract # 133

“High Precision SEC Analysis of Polymers”

Judit E. Puskas - The University of Akron
Workshop Presentation - 60 minutes - 2:15 PM - Wed Abstract # 138

Iris

Multidimensional Separations Symposium

Co-chairs - Bill Winniford & Kefu Sun - The Dow Chemical Company

“Finally: A True Peak Capacity Increase for GCxGC of Petroleum Samples”

Jack Cochran, Frank Dorman, Gary Stidsen, Mike Wittrig, Roy Lautamo, Barry Burger, Jan Pijpelink, Jaap de Zeeuw Restek Corporation Anja Kohl, Donald Cropek U.S. Army Corps of Engineers
Paper Presentation - 30 minutes - 10:00 AM - Wed Abstract # 007

“Flow Modulated GCXGC at the Extreme Ends of the Boiling Point Range”

Roger L. Firor(1), Jim Luong(2), and Ronda Gras(2)- Agilent Technologies(1), Dow Chemical Canada (2)
Paper Presentation - 30 minutes - 10:30 AM - Wed Abstract # 021

“A New Concept Of GCxGC/TOF-MS To Address Biofuel Analysis”

Alessandro Casilli - DANI Instruments SA
Paper Presentation - 30 minutes - 11:00 AM - Wed Abstract # 154

“Comparing Quantitative Analysis by Flow Modulation GCxGC vs Cryogenic Modulation GCxGC”

Kefu Sun, Bill Winniford, James Griffith - The Dow Chemical Company
Paper Presentation - 20 minutes - 11:30 AM - Wed Abstract # 157

“Tuning Differential Flow Modulation GC x GC with Independent Column Temperature Control”

James Griffith, Bill Winniford, Kefu Sun, Jim Luong - The Dow Chemical Company
Paper Presentation - 30 minutes - 1:00 PM - Wed Abstract # 165

“Getting the Most Out of the 2nd dimension in GC x GC”

Bill Winniford, James Griffith, Kefu Sun, Jim Luong, Daron Decker (Agilent Technologies)
Paper Presentation - 30 minutes - 1:30 PM - Wed Abstract # 166

“Parallel Gas Chromatography for On-line Analysis of Reactor Effluents from Synthesis Gas Reactions”
Chao Xu; Stacey Beyer; Eric Schmidt; Mubasher Bashir; Valerie Mertens; Rob Edam - The Dow Chemical Company
Paper Presentation - 30 minutes - 2:00 PM - Wed Abstract # 022

“Fast 2-D GC Analysis of Ethanol Based Motor Fuels”
James D. McCurry - Agilent Technologies
Paper Presentation - 30 minutes - 2:30 PM - Wed Abstract # 104

“Trends, Learnings, Pitfalls in Multidimensional Separations”
Bill Winniford - The Dow Chemical Company
Group Discussion – 30 minutes – 3:00 PM – Wed Abstract # 179

Orchid

Agilent Technologies Workshop

Introduction - 9:30 AM - The Agilent Technologies Gulf Coast Conference workshop will focus on new solutions to improve productivity and expand analysis capabilities of laboratories supporting petroleum, refining and chemical industries. Topics will include 1) Analysis Solutions for Greenhouse Gas Solutions, 2) A New PLOT Column for Trace Sulfur Measurements In Hydrocarbons, 3) Reliable Analysis of Light Petroleum Fractions Using Capillary Flow Technology Backflush, 4) Solutions for Oxygenate Analysis in Fuels, 5) Improved ICP-OES Elemental Analysis of Gasoline, 6) Advanced Technologies for Analysis of Hydrocarbon Contamination in the Environment and Foods. Following the technical presentation, there will be a social reception.

“Solutions for Greenhouse Gas Analysis”
Chunxiao Wang - Agilent Technologies Shanghai
Paper Presentation - 30 minutes - 10:00 AM - Wed Abstract # 102

“Determining Low ppb Levels of Reactive Sulfur Compounds in Hydrocarbon Matrices Using a New Generation PLOT Columns”
Johan Kuipers and Helena Jacobse - Agilent Technologies, The Netherlands
Paper Presentation - 30 minutes - 10:30 AM - Wed Abstract # 103

“Reliable Analysis of the Light Ends of Petroleum Fractions and Crude Oil Using Capillary Flow Backflush Technology”
Roger L Firor - Agilent Technologies
Paper Presentation - 20 minutes – 11:00 AM - Wed Abstract # 023

Lunch Break

“Oxygenates in Fuels - Analysis Solutions From Trace Levels to Ethanol Fuels”
James D. McCurry - Agilent Technologies
Paper Presentation - 30 minutes - 1:30 PM - Wed Abstract # 105

“Low Level Elemental Impurity Determination in Gasoline Using ICP-OES with FACT spectral Deconvolution Correction”
Steve Wall, Patrick Simmons, and Doug Shrader - Agilent Technologies
Paper Presentation - 30 minutes - 2:00 PM - Wed Abstract # 106

“Advanced Measurement Technologies for Analyzing Environmental Matrices Contaminated with Petroleum Hydrocarbons”
Cynthia Cai, Mike Szelewski, and Joni Stevens - Agilent Technologies
Paper Presentation - 30 minutes - 2:30 PM - Wed Abstract # 107

Agilent Technologies Social Event - 3:00 PM

Wisteria

“Titrator Training Course - Introductory Session”
Tore Fossum - Mettler Toledo, Inc.
Training Course - 3 hours – 9:00 AM - Wed Abstract # 093

“Titration Training Course - Advanced Session”
Tore Fossum - Mettler Toledo, Inc.
Training Course - 3 hours – 1:00 PM Wed Abstract # 094

Ivy I & II Moody Gardens Hotel

Fuel Ratings Symposium 2010 - Day 2

“OIL / GREASE IN (SEA) WATER PORTABLE & CFC-FREE, A New Mid-IR Laser Based analyzer for Total Petroleum Hydrocarbons in Water”

Prof. B. Lendl, DI W. Ritter, DI Michael Strassl - QuantaRed Technologies GmbH, Institute of Chemical Technologies and Analytcs, Vienna University of Technology, Eralytics GmbH
Paper Presentation - 60 minutes - 8:45 AM - Wed Abstract # 040

“5th Generation of Automatic Atmospheric Distillation Instrument Model NDI 450”

Julien Brosse, NORMALAB
Paper Presentation - 40 minutes - 9:45 AM - Tues Abstract # 042

“CFR Engine Operation & Maintenance - Open Discussion”

Panel: Dan Bemis (DresserWaukesha), Tom Jones (Compass Instruments, Inc), Mike Burnett (Compass Instruments, Inc), and others
User Discussion - 30 minutes - 10:30 AM - Tues Abstract # 050

“HFRR Workshop -Testing and Best Practices”

Rich Baker, PCS Instruments
Workshop Presentation- 60 minutes - 1:00 PM - Wed Abstract # 037

GC Session

“An Advanced Base Deactivated Capillary Column for analysis of Volatile Amines, Ammonia and Alcohols.”

Jaap de Zeeuw, Ron Strieck and Gary Stidsen - Restek Corporation
Paper Presentation - 30 minutes - 2:00 PM - Wed Abstract # 004

“Fast Detailed Hydrocarbon Analysis According to Golay: Microbore ASTM D 6730”

Walter Spieksma, Tom Grills and David Balasz - Ervantage, Inc.
Paper Presentation - 30 minutes - 2:30 PM - Wed Abstract # 020

3:00 PM Presentation moved to Agilent Seminar Series on Wednesday

“Investigating Air as a Carrier Gas with Ionic Liquid Capillary Columns”

L.M. Sidisky, Y. Ni, G.A. Baney, J.L. Desorcie, K.K. Stenerson - Sigma-Aldrich/Supelco
Paper Presentation - 20 minutes - 3:20 PM - Wed Abstract # 115

“Analysis of Oily Residues in LPG, by Gas Chromatography”

Lenny Kouwenhoven - Da Vinci Europe Laboratory Solutions
Paper Presentation - 30 minutes - 3:40 PM - Wed Abstract # 066

Vine I & II Moody Gardens Hotel

Fuel Ratings Symposium 2010 - Day 2

Abstract # 46 Workshop - Off-site Laboratory Visit - 4 hours - Fuel Ratings Symposium 2010 Demonstration Presentation - Tues & Wed - Register at the Compass Booth # 214

Fuel Ratings Symposium 2010 “XCP Live Demo with Hands on Opportunity”

Tour Guide: Bob Stamp, Compass Instruments, Inc. Demo by: Mike Burnett (Compass Instruments, Inc.), Dan Bemis (DresserWaukesha) Compass Instruments, Inc

Fuel Ratings Symposium 2010 “How to be Successful with CVCC”

Dr. Michael Croudace, Compass Instruments, Inc. - Jeff Bizub (DresserWaukesha), Nathan Pekoc (Compass Instruments, Inc.), Tom Bell (Exchange Group Data Services), Pat Ritz (PAC), and others
Workshop Presentation - 2 hours - 8:30 AM - Wed Abstract # 044

Fuel Ratings Symposium 2010 “Vapor Pressure Measurement Of Gasoline, Crude Oil & LPG With New ASTM D5191 & D5188 Speed Test”

Philipp Jordan, Eralytics GmbH
Paper Presentation - 60 minutes - 10:30 AM - Wed Abstract # 052

“Rotary Valves, Then and Now – An improved Design – A New Industry Standard”

Gordon McFarlane, Yves Gamache - Analytical Flow Products
Paper Presentation - 30 minutes - 1:00 PM - Wed Abstract # 126

“Analysis of LPG Residue by Thermal Desorption Gas Chromatography”
Lee Marotta, Heidi Grecsek, and Leeman Bennington – PerkinElmer
Paper Presentation - 30 minutes - 1:30 PM - Wed Abstract # 077

“Determination of Low Level Methanol in Crude Oils (ASTM D7059-04) Improved by New Micro-Channel Flow Technology in Gas Chromatography”
Heidi Grecsek, Lee Marotta, and Andrew Tipler - PerkinElmer, Inc.
Paper Presentation - 30 minutes - 2:00 PM - Wed Abstract # 083

Thursday Session - October 14, 2010

Fuel Ratings Symposium 2010 - Day 3

Ivy I - Moody Gardens Hotel

Fuel Ratings Symposium 2010 “Rocky Mountain Regional Group”
User Group Meeting - 4 hours - 9:00 AM - Thurs Abstract # 055

Ivy II - Moody Gardens Hotel

Fuel Ratings Symposium 2010 “Great Lakes Regional Group”
User Group Meeting - 4 hours - 9:00 AM - Thurs Abstract # 055

Vine I - Moody Gardens Hotel

Fuel Ratings Symposium 2010 “Texas Regional Group”
User Group Meeting - 4 hours - 9:00 AM - Vine I Abstract # 056

Hall A - Moody Gardens Convention Center Exhibit Hall

“PANanalytical Annual Gulf Coast X-ray User Group Meeting”
User Group Meeting - 7 hours - 9:00 AM - Thurs Abstract # 183

Floral Hall A

Thermo Fisher Scientific “Gulf Coast Refining & Petrochemical Day”
You must register separately for this event at www.thermofisherscientific/gulfcoast

Poster Sessions

Wednesday October 13, 2010

Moody Gardens Convention Center - Exhibit Hall

Authors of the below poster presentations have been asked to attend their poster(s) at the specified times below to discuss their work and answer any questions by attendees. Authors may post their presentations in the exhibit hall any time during exhibition hours on Tuesday, October 12th. Presentations are to remain on display until 5:00 PM on Wednesday, October 13th.

“A New High Retentive and Selective GC column for the Separation of CFC, based on Alumina Adsorbent”

Jaap de Zeeuw and Tom Veza - Restek Corporation

9:00 AM - Wednesday Abstract # 003

“Extending the Resolution Power of new Generation Stabilized PLOT columns to Full Metal 0.53mm ID Wide Bore Columns”

Jaap de Zeeuw, Rick Morehead, Tom Veza and Gary Stidsen - Restek Corporation

9:20 AM - Wed Abstract # 006

“Using Packed Adsorbents in MXT 0.53mm ID Wide-Bore columns; Increasing Retention, Loadability and Robustness for Volatiles in Challenging Environments”

Jaap de Zeeuw, Rick Morehead and Gary Stidsen - Restek Corporation

9:45 AM - Wed Abstract # 013

“Automated Method Development for HPLC/MS”

Sue D'Antonio, Lynne Marshall, Andre Szczesniewski

10:00 AM - Wed Abstract # 017

“Automated Method Development Using UV and MS Detection”

Sue Dantonio, Lynne Marshall, Andre Szcznewski - Agilent Technologies

10:20 AM - Wed Abstract # 018

“Enhanced LNG Sulfur Stability in Sulfinert versus Stainless Steel Sample Cylinders”

Silvia Martinez - Restek Corporation

10:45 AM - Wed Abstract # 024

“Determination of Elements at Sub-ppb Concentrations in Naphtha Mixtures Using the Perkin Elmer NexION 300 ICP-MS”

Stan Smith - Perkin Elmer

11:00 AM - Wed Abstract # 057

“Evaluation of Several Methods For Post-Extraction GPC Clean-up of Fish Tissue Prior to PBDE and PCB Analysis”

Michael Halvorson (Gilson, Inc., Middleton, WI) Thomas Gibson, Carol Buelow and Curtis Hedman (Wisconsin State Lab of Hygiene)

11:20 AM - Wed Abstract # 060

“Applications of TG-MS and TG-GC-MS to Polymers”

Peter Muller, Justin Lang, Peng Ye - PerkinElmer, Inc.

11:40 AM - Wed Abstract # 061

“Combined DSC-Raman to Polymer and Pharmaceutical Characterization”

Justin Lang, Peter Muller, Peng Ye - PerkinElmer, Inc.

1:00 PM - Wed Abstract # 063

“A Comparison of Porous Layer Open Tubular (PLOT) Columns for the Separation of Refinery Gases”

Robert Wiedemer, Rob Bunn, Tony Edge - Thermo Fisher Scientific

1:20 PM - Wed Abstract # 065

“FTIR Analysis of Trace Water in Anhydrous Ammonia”

Jesus Anguiano - CONSCI

Poster Presentation - 1:40 PM - Wed Abstract # 071

“Quantitative Applications of Single and Multi-Reflection Diamond Attenuated Total Reflection Measurements.(FAME,EtOH)”

Dean Brown - PerkinElmer

9:30 AM - Wed Abstract # 074

"Analytical Applications By Ultra Fast Gas Chromatography"

Aaron Mendez and Vincent Otten - PAC

10:20 AM - Wed Abstract # 078

Gulf Oil Spill Symposium "Characterization of Dispersants by Reversed-Phase High Pressure Liquid Chromatography and Charged Aerosol Detection"

Matthew Neely, Marc Plante, Bruce Bailey, Ian Acworth - ESA - A Dionex Company

10:00 AM - Wed Abstract # 081

"Determination of Metals in Paints, Substrates and On Various Work Surfaces - A New Generation of Certified Calibration Materials"

John B. Sardisco, PhD., Keith A. Perrin, John S. Crnko - Analytical Services, Inc.

10:30 AM - Wed Abstract # 130

"TXRF for Environmental Applications with the BENCHTOP S2 PICOFOX"

Dr. Michael Rider Bruker AXS Inc., The Woodlands, TX Michael Beauchaine Bruker AXS Inc. Madison, WI Dr. Hagen Stosnach, Bruker Nano GmbH, Berlin Germany

10:40 AM - Wed Abstract # 092

"The Extraction of Glycols From Water Using ENVI-Carb Plus Solid Phase Extraction Cartridges"

L.M. Sidisky, K.K. Stenerson, W.R. Betz, M.J. Keeler, J. Brown, and M.R. McCoy - Sigma-Aldrich/Supelco

11:00 AM - Wed Abstract # 110

Gulf Oil Spill Symposium "Detection and Identification of Dispersants (Corexit 9527 and Corexit 9500) by GC/MS and HPLC"

Kory Kelly, Sky Countryman, Ngoc Nguyen, Terrell Matthews - Phenomenex, Inc

11:30 AM - Wed Abstract # 111

"ASTM D 3606 Analysis for Quantifying Benzene and Toluene in Finished Gasoline Made Simple"

Barry L. Burger, Jan Pijpelink - Restek Corp.

11:40 AM - Wed Abstract # 113

Gulf Oil Spill Symposium "Detection of Environmental Contaminants Caused By The Oil Spill In The Gulf Of Mexico By GC/MS And LC/MS/MS"

Kory Kelly, Sky Countryman, Ngoc Nguyen, Terrell Matthews, Chris Fernandez, Matthew Trass - Phenomenex, Inc

1:00 PM - Wed Abstract # 114

"New Zebron ZB-1XT SimDist GC Column Provides 70% Higher Efficiencies, For Improved Results of Simulated Distillation Analysis"

Kory Kelly, Sky Countryman, Ngoc Nguyen, Chris Fernandez, Matthew Trass - Phenomenex, Inc

1:20 PM - Wed Abstract # 116

Development of a Logistically-Enabled Sampling System (LESS™) for the Collection of High Geographic Density or High Temporal Resolution Samples Using Multi-Bed Sorbent Tubes"

Kyle Hunt, Renee Williams, Matt Bartlett, Brian Schimmoller - Signature Science, LLC

1:00 PM - Wed Abstract # 120

"Fast Determination of Impurities in Propane-Propylene Streams Using a Pulsed Flame Photometric Detector (PFPD) and a New Capillary PLOT Column"

Laura Chambers, Gary Engelhart, Hank Hahn - OI Analytical

1:40 PM - Wed Abstract # 121

"NeSSI is an acronym for New Sampling/Sensor Initiative, Not a Monster"

Gordon McFarlane, Yves Gamache - Analytical Flow Products

1:30 PM - Wed Abstract # 124

"Streamlined Method for Quantitation of Bisphenol-A in Saliva using Liquid Chromatography – Tandem Mass Spectrometry"

Aaron A. Morgan; Samuel H. Yang; Benjamin J. Figard; Kevin A. Schug - University of Texas at Arlington

10:00 AM - Wed Abstract # 127

"Use of GC×GC/TOF-MS in the Analysis of Petroleum Hydrocarbons: Advantages of Library-Searchable ToF Mass Spectra Combined with High Chromatographic Resolution"

Kurt Thaxton(1), Nicola Watson(2), Nick Bukowski(1) - (1) ALMSCO International (2) Markes International

1:40 PM - Wed Abstract # 140

"Introduction of a New Fast Scanning, Highly Sensitive Single Quadrupole GCMS: A Platform for Modern Chromatography Techniques"

C. Mark Taylor, Richard R. Whitney, S. Michael McCown - Shimadzu Scientific Instruments

10:40 AM - Wed Abstract # 151

"A Quick and Sensitive Method for the Analysis of Fatty Acids Present in a Biodiesel Sample Using UHPLC/MS"

Hayley Crowe, Sharanya Reddy, Ali Kettani, Silverio Iacono - Perkin Elmer Inc.

Poster Presentation - 1:50 PM - Wed Abstract # 181

2011 Gulf Coast Conference Schedule

February 1, 2011	Call For Papers
July 15, 2011	Paper Submission Deadline
July 15, 2011	Program Advertising Deadline
October 10, 2011	GCC Golf Tournament
October 10, 2011	Exhibitor Move In
October 11, 2011 - 9:00 AM	Conference Opens
October 12, 2009 - 5:00 PM	Conference Closes



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Meet in the Exhibit Hall for Lunch!



The Gulf Coast Conference would like to thank Chemplex Industries and Analytical Services, Inc. for their strong support of our annual meeting. This year the two companies have jointly sponsored a lunch for all on Tuesday in the exhibit hall from 12:00 - 1:30 PM. And **NEW** for this year, lunch is provided on Wednesday by our long-time supporters - Thermo Scientific, PerkinElmer, PAC, and Intertek. This level of support is of benefit to us all, so be sure to stop by each of their booths for a good Texas size THANK YOU!



Abstract# 1 - 9:30 AM - 30 minutes – Iris - Tuesday

“Expansion of ASTM D5186 for Analysis of Fatty Acid Methyl Esters in Diesel Fuel and Expansion of ASTM D6550 for Analysis of Olefins in High Boiling Petroleum Distillates” *Curt M. White - Waters Corporation*

We have recently extended the application range of the ASTM D5186 to include several SFC/FID methods for analysis of biodiesel resulting in two new methods. The first method allows one to determine the biodiesel content of diesel fuel over the range of about 1 to 50 mass % biodiesel. Results from application of the draft ASTM method to analysis of various biodiesel in diesel samples will be described. This method is useful to refineries that are required to show that their diesel fuel contains 2 weight % biodiesel and for state regulators that periodically sample commercially available diesel fuel and test for compliance. A second method is useful for analysis of B100, and allows one to determine the FAME at each carbon number, total FAME, total mono-, di- and triglycerides, free fatty acids and methanol content of the biodiesel. This method is useful for analysis of process streams within a biodiesel processing facility, and is useful for quality control of B100 coming into a refinery that will be blended with diesel. Lastly, ASTM D6550 is useful for analysis of olefins in gasoline. We have extended the application range to analysis of olefins in higher boiling petroleum distillates. Results from high and low vacuum gas oils will be described. Paper Presentation

Abstract# 2 - 1:00 PM - 30 minutes – Orchid - Tuesday

“Which Pollutants can be Measured and Which Cannot” *Bob Davis - Airgas Inc*

The paper will define the HAPS (Hazardous Air Pollutants) and advise the audience the nature of each pollutant as well as the risks to the public. The paper will then advise the audience of what methods can be used to test for these specific pollutants. Most important is the fact that many of the HAPs cannot make a proper calibration gas for due to the chemical nature. Because of this I will demonstrate to the audience which HAPs should never be included in permits because they will never be measured properly. This is important for state permit writers of title V permits as well as the companies that have to abide by the pollutants that they are required to monitor for in the permits. Many times surrogate chemicals are suggested ;however, they are not always a good choice as they will have interferences and may not measure the HAP properly. State agencies and permit holders should be very specific as to what particular pollutants can and cannot be measured properly. If a pollutant cannot be measured then there is no efficient way to manage the pollutant. This could create a huge waste of time and money for both the states and the companies that are trying to measure the pollutants involved. I will have a summary chart for those who participate in the paper to assist them in the HAPs measurement process. Paper Presentation

Abstract# 3 - 9:00 AM - 20 minutes - Exhibit Hall - Wednesday

“A New High Retentive and Selective GC column for the Separation of CFC, based on Alumina Adsorbent” *Jaap de Zeeuw and Tom Vezza - Restek Corporation*

Chloro-Fluoro Carbons (CFC), also known as Refrigerants or Propellants, are highly volatile compounds which can be analyzed via gas chromatography. Their production, application and especially release is controlled carefully as they have a direct impact on the ozone layer. For the separation via GC, we meet some challenges as due to their volatility, a stationary phase is required with very high retention. In gas liquid separations films up to 10 micrometer can be coated, but such thick-films coated columns have low efficiency, due to the huge contribution to mass transfer in the liquid phase. A more elegant solution is to use adsorbents for the separation. Alumina coated PLOT columns were developed and applied already 25 years

ago with limited success due to high activity of the alumina materials used. Porous polymers also did not provide the correct selectivity and showed severe band broadening. The use of alumina was recently revisited for hydrocarbon separations and during this project a procedure was developed to reduce the activity of the alumina significantly, making this adsorption material applicable for a large range of CFC type compounds. The resulting AluminaBOND CFC column was tested with a series of halogenated components including chlorinated and fluorinated volatiles at different levels. Most compounds behaved very well although the column still showed some reactivity. Poster Presentation

Abstract# 4 - 2:00 PM - 30 minutes - Ivy I & II - Wednesday

“An Advanced Base Deactivated Capillary Column for analysis of Volatile Amines, Ammonia and Alcohols.” *Jaap de Zeeuw, Ron Strieck and Gary Stidsen - Restek Corporation*

To analyze basic compounds at nano gram levels using gas chromatography, a basic surface modification is often required to reduce the impact of the acidic fused silica. Additionally, to separate volatile components, retention and efficiency at lower temperatures is required also. Base-modified polyethylene glycols have been available for some time, but are not very stable and they lose efficiency when used below 60C. Siloxanes are more challenging for base modification as the stability siloxane polymer should not be compromised. There are some solutions available, but there is room for improvement as present phases technologies are considered not optimal which translates in short column life times and non-reproducibility in amine response.. An advanced base deactivation technology has been made available several years ago by Restek corporation, where a new surface deactivation of fused silica was introduced. Such columns were commercialized under the names Rtx-5 amine and Rtx-35 amine. Similar approach was taken for designing a more stable column for volatile amines, not only by increasing the film thickness, but also by creating a direct link with the (base) surface deactivation. Additionally the number of cross-links (bridges) between polymer chains was optimized to make the polymer keeps efficiency as low as temperatures of 40 °C. The higher degree of cross-linking was incorporated to make the column more resistant for amine/water mixtures. The column, named Rtx Volatile amines, was tested with a series of amine samples and water matrices, to demonstrate performance. In this presentation, several applications will be presented and discussed. Paper Presentation

Abstract# 5 - 10:00 AM - 30 minutes – Iris - Tuesday

“Column Selection and Sample Introduction for Bio-Fuel Analysis” *Jaap de Zeeuw - Restek Corporation*

The last 5 years there is an increased interest in using bio fuels. Several GC methods for biodiesel as well as bio alcohol have been developed. Implementation is not as easy as some methods require specialized injection techniques. In this presentation we will zoom into the challenges we have when GC techniques are applied for both bio fuels. We will zoom into details of split, on-column and PTV injection, discussing the application as well as the limitation when used for listed applications. Paper Presentation

Abstract# 6 - 9:20 AM - 20 minutes - Exhibit Hall - Wednesday

“Extending the Resolution Power of new Generation Stabilized PLOT columns to Full Metal 0.53mm ID Wide Bore Columns” *Jaap de Zeeuw, Rick Morehead, Tom Vezza and Gary Stidsen - Restek Corporation*

Separation of volatiles is ideally performed on PLOT columns. Many adsorbents have been commercially available in fused silica tubing materials. In time, there became an increasing need to develop the PLOT column in a metal capillary. The last years several new technologies have been developed to manufacture stable fused silica PLOT columns. Molecular sieves, alumina and

porous polymers were all deposited efficiently on 0.53mm MXT metal tubing. Columns showed high permeability, constant flow restriction and similar chromatographic performance as seen with fused silica. The big advantage of metal, is the robustness: its virtually unbreakable and it can be coiled down to small diameters, even the 0.53mm columns. In this poster data of merit is presented for alumina, molsieve 5A and porous polymer columns on chromatographic performance, but also on stability of the coating, when used in valve switching type applications. Poster Presentation

Abstract# 7 - 10:00 AM - 30 minutes – Iris - Wednesday

"Finally: A True Peak Capacity Increase for GCxGC of Petroleum Samples" *Jack Cochran, Frank Dorman, Gary Stidsen, Mike Wittrig, Roy Lautamo, Barry Burger, Jan Pijpelink, Jaap de Zeeuw Restek Corporation Anja Kohl, Donald Cropek U.S. Army Corps of Engineers*

Blumberg said, "in spite of more than 15 years of claims... of GCxGC to resolve an overwhelmingly larger number of peaks than 1D-GC... the peak capacity of currently practiced GCxGC does not generally exceed the peak capacity attainable from 1D-GC". Blumberg's point was 1D column operation is suboptimal to increase peak widths for modulation. We used 120m 1D columns that efficiently generate 15 sec peaks, and matched 2D accordingly for 3 modulation cycles per 1D peak to analyze diesel, biodiesel, jet fuel, fog oil, and gasoline. We observed true peak capacity increases versus 1D separations on longer columns. Multidimensional Separations Symposium Paper Presentation

Abstract# 8 - 10:30 AM - 20 minutes – Orchid - Tuesday

"Importance of Sulfur Heterocycles in Organic Chemistry - an Overview" *Cyril Parkanyi - Florida Atlantic University*
Sulfur-containing heterocycles represent an important part of organic chemistry. More than one half of all known organic compounds contain at least one heterocyclic component. In sulfur-containing heterocyclic compounds, the sulfur atom can be a part of the ring (endocyclic sulfur) or it can be attached to the ring as a substituent (exocyclic sulfur). Many sulfur-containing heterocycles are biologically active. Other heterocyclic compounds are toxic and volatile sulfur heterocycles are typically associated with strong odor. Sulfur-containing heterocycles have a very wide range of applications - as pharmaceuticals, agrochemicals, veterinary products, dyes and pigments, food flavors and aromas, etc. Examples of different types and uses of sulfur heterocycles will be presented. Paper Presentation

Abstract# 9 - 1:30 PM - 20 minutes – Daffodil - Wednesday

"Modeling of Liquid-Vapor Equilibrium in Liquefied Refinery Calibration Standards" *Daniel Bartel, Director - Technical Support Services - Airgas Specialty Gases*
Liquefied calibration standards are prepared in either constant pressure piston or standard gas cylinders. When using either type of container it is typical to use a pressurization gas to stabilize the component concentrations into the liquid phase. When pressurization gas is used with a standard gas cylinder the pressurization gas and calibration fluid are in direct contact. There is equilibrium exchange of pressurization gas into the calibration fluid and calibration fluid components into the pressurization gas. This presentation will show how component concentrations vary due to Vapor-Liquid Equilibrium as a Liquefied Calibration Standard is depleted. Paper Presentation

Abstract# 10 - 12:30 PM - 30 minutes – Hibiscus - Tuesday

"New X-ray Technology to Measure Low Sulfur Concentrations" *Michael C. Pohl, David Malone, Rudy Haas - Horiba Instruments*
Sulfur determination in fuel samples has been a concern for many years now. Due to the broad range of concentrations measured and the non-destructive nature of the test, X-ray Fluorescence technology has become extremely popular. As the sulfur level in the fuels have dropped over the years, new technical advances have been required. Initially more powerful X-ray sources were

employed to increase the fluoresced X-ray signal. As the sulfur levels have gone down to the very low PPM level, more advanced technology was required. The focus shifted from higher signal levels to lower background noise levels. This advance was ushered in by the use of new X-ray optics. These developments will be discussed with reference to sample measurement and capabilities as evidenced by ASTM Methods. Paper Presentation

Abstract# 11 - 1:40 PM - 20 minutes – Daffodil - Tuesday

"Raman Spectroscopy Monitoring for Control of Benzene Levels in Gasoline Products (MSAT)" *Lee Smith, Rory Uibel, and Robert Benner - Process Instruments*

To comply with recent EPA Consent Decree Agreements for Mobile Source Air Toxics (MSAT II), refineries are having to lower benzene emissions in their gasoline products to 0.62 vol % on an annualized basis by the first quarter of 2011. Normally this would be monitored with traditional methods such as D3606 or GC-MS. We report on using Raman scattering instrumentation to directly measure benzene levels in gasoline component streams and/or finished products. After obtaining on-line grab samples (as few as 25 to 50 samples) over a period of several weeks, their lab properties and Raman spectra were collected. Chemometric models were prepared to directly predict the concentration of benzene in component streams including reformate, heart cut, raffinate, etc. Data indicate that benzene levels with an Standard Error of Prediction (SEP) of 0.02 vol% or better can readily be obtained. Additional stream parameters can be predicted including concentrations of cyclohexane, methyl cyclohexane, cyclopentane, methyl cyclopentane, butane, API gravity, density, Octane, distillation profile, etc. Paper Presentation

Abstract# 12 - 9:00 AM - 90 minutes – Daffodil - Tuesday

"Troubleshooting (Petro)chemical Applications by Reading the Chromatograms" *jaap de zeeuw - Restek Corporation*
In this seminar we will zoom into the chromatogram. The chromatogram is like a fingerprint: looking at the retention times, the peak shape, the area response will tell us a lot about possible problems that we may have to deal with. We will discuss several practical issues that people may meet in the lab work, by looking at chromatograms and we will discuss possible solutions for the problem. We will zoom in hydrocarbon separations, volatile up to heavy as well as the analysis of highly polar, thermolabile or reactive components. A lot of practical experiences and tips is shared to help you solve your challenges in your daily work. Seminar Presentation

Abstract# 13 - 9:45 AM - 20 minutes - Exhibit Hall - Wednesday

"Using Packed Adsorbents in MXT 0.53mm ID Wide-Bore columns; Increasing Retention, Loadability and Robustness for Volatiles in Challenging Environments" *Jaap de Zeeuw, Rick Morehead and Gary Stidsen - Restek Corporation*
Separation of volatiles can be well done using adsorption chromatography. Using high retentive adsorbents, unique separations can be done at higher temperatures. Additionally, adsorbents are difficult to destroy, resulting in long column life times. Adsorbents have been coated also in capillary columns. Such columns are known as PLOT columns where the adsorbent is deposited as a layer of 5-50 um on the internal capillary surface. PLOT columns like alumina, Porous polymers and molsieves, have high efficiency, but a limitation is the loadability. An other way to make use of the selectivity of the adsorption materials is to use the micropacked column. Restek developed a packing procedure and unique seal, to pack 0.53mm MXT columns with adsorbents, providing new application options - Using the full Selectivity of adsorbents like Shincarbon, Molecular sieves, Porous polymers - High loadability and retention for volatile compounds - No particle release whatsoever as its a packed column - Can be coiled at very small diameters, flows 1-4 mL/min Additionally all 0.53mm columns can be used in any capillary GC, meaning and capillary technologies can be used with these columns also. Successful packings include shincarbon allowing fast CO and CO2 measurement in air;

Also Molsieve 5A, doing permanent gases including CO in 70 seconds. The use of Siltek deactivated SS tubing also guarantees the elution of polar and reactive analytes. Poster Presentation

Abstract# 14 - 9:00 AM - 1 Day – Bluebonnet - Tuesday

"Waters Corporation Workshop" *Suzanne Decatur - Waters Corporation*

9:00 to 10:00 Improving the way we do method development in LC. This will be workshop on how to develop an efficient method development strategy in liquid chromatography. Tips and trick as well as a step by step approach will be discussed. 10:00 to 11:00 A detailed discussion of EPA methods 5186 and 6550 as well as the analysis of Bio diesel. 11:00 to 12:00 Empower 2 Training Class I Topics covered will be: Creating GC, LC, and MS methods Data Acquisition and how the various parameters affect data Processing 2D and 3D data 12:00 to 1:00 Empower 2 Training Class II Topics covered will be: Custom report creation Custom calculations Information Filtering and retrieval Data export and interaction with SDMS 1:00 to 2:00 How Waters has improved the workflow from sample prep to data submission for LC/MS and LC/MS-MS 2:00 to 3:00 An overview on recent advances in MS technology as it relates to Industrial labs 3:00 to 4:00 Advances in at line analysis with LC Workshop Presentation

Abstract# 15 - 1:10 PM - 45 minutes - Floral Hall A - Wednesday

Thermo Seminar Series - "Handheld MIR, NIR and Raman Spectrometers" *Cam Macisaac - ThermoScientific*
This talk will cover 3 unique portable, hand held spectroscopy techniques. Instead of taking your samples to the lab, take the spectrometers to your samples. This eliminates the lag time and allows collection of data on samples previously not possible Three discrete spectrometers, Mid IR, Near IR and Raman spectrometers in a portable handheld form factor will be covered. We will also have case studies on all 3 techniques exhibiting their capabilities. Thermo Seminar Series Paper Presentation

Abstract# 16 - 9:30 AM - 60 minutes – Orchid - Tuesday

"A New Generation in Process GC" *John Crandall - Falcon Analytical Carl Rechsteiner - Chevron Brian Rohrback - Infometrix*
Because so much of our effort is focused on control of composition, we turn to gas chromatography as the most direct method of characterizing samples in the hydrocarbon industry. The purpose over the last 40 years or so has been impressive as we have deployed automation to the sampling systems, capillary column technology to the separation, and computers to the data collection and archival. A tremendous amount of effort has been applied to each of these segments pushing us into the 21st century. As is usually the case when a technology matures, there is little motivation and an innate reluctance to challenge the basic tenets of the individual instrument pieces in the system mix and so improvement slows and becomes more incremental. 2010 is a good time to rethink how we can integrate the component technologies and re-engineer how process GC will be done in the future. The goal is to make instruments that are significantly more responsive and cost-effective. An unprecedented effort by thought leaders in the petroleum industry, analyzer manufacturing and computer sciences has resulted in the first all-new process GC in several decades. Part 1: Sampling and Hardware to be presented by Crandall - 20 minutes Part 2: Software and Information Processing to be presented by Rohrback - 20 minutes Part 3: An Example System and Approach to be presented by Rechsteiner - 20 minutes Paper Presentation

Abstract# 17 - 10:00 AM - 20 minutes - Exhibit Hall - Wednesday

"Automated Method Development for HPLC/MS" *Sue D'Antonio, Lynne Marshall, Andre Szczesniewski*

With the need for new methods for analysis of non volatile compounds. LC/MS is a technique which is effective in the separation and identification of these types of compounds. With an automated

method development system and a single quadrupole LC/MS an analyst is significantly able to reduce their method development time. In this poster, we will show the easy of use of automated method development systems. Poster Presentation

Abstract# 18 - 10:20 AM - 20 minutes - Exhibit Hall - Wednesday

"Automated Method Development Using UV and MS Detection" *Sue Dantonio, Lynne Marshall, Andre Szczesniewski - Agilent Technologies*

With the need to adapt HPLC methodology for new compounds and sample matrixes. This presentation shows the ease of method development. By use of a single quadrupole MS detector, peak retention time variations are identified. This eliminates the need to run individual standards to track retention time variations as conditions and columns change. Poster Presentation

Abstract# 19 - 1:00 PM - 20 minutes Exhibit Hall - Wednesday

"Concentration Measurement of FAME in Biofuels by FTIR" *Dean Brown - PerkinElmer*

Reducing our dependence on fossil fuels has led to the increasing the use of biodiesel fuel. The move to include proportions of Biodiesel in fuel has created a host of unresolved issues. Uppermost among these are questions are the concentration of the biofuel (Fatty Acid, Methyl Ester FAME) and its quality. However, there are several characteristics (including cetane number, oxidation stability, and corrosion potential) that are of concern. These differences, especially the cetane reduction, require that adequate control of the biofuel concentration be implemented. Infrared measurements can be used to address the concentration measurements. Paper Presentation

Abstract# 20 - 2:30 PM - 30 minutes - Ivy I & II - Wednesday

"Fast Detailed Hydrocarbon Analysis According to Golay: Micro-bore ASTM D 6730" *Walter Spieksma, Tom Grills and David Balasz - Envantage, Inc.*

Detailed Hydrocarbon Analysis (DHA) of Gasoline takes 3 hours of instrument time according to ASTM method D6730. Optimisation of the temperature program and adjustment of the pre-column length may take weeks at a maximum throughput of 8 samples per day... The new Envantage method translator (Golay.exe) uses the Golay equation to predict capillary GC resolution, sensitivity and speed. Golay discovered the separation power of Wall Coated Open Tubular columns (WCOT). Golay.exe uses Enskog-Chapman gas diffusion and liquid diffusion in Dimethylsilicone calculated from measured peak width. Envantage miniaturized D 6730, reducing run time to less than 35 minutes and reducing optimisation time to less than a week. The 100m column and the 40m column do the same critical separations. Golay.exe will be presented and speed limits of DHA will be discussed in terms of resolution and sensitivity. Paper Presentation

Abstract# 21 - 10:30 AM - 30 minutes – Iris - Wednesday

"Flow Modulated GCXGC at the Extreme Ends of the Boiling Point Range" *Roger L. Firor(1), Jim Luong(2), and Ronda Gras(2)- Agilent Technologies(1), Dow Chemical Canada (2)*

Differential flow modulation is capable of analyzing samples at extreme ends of the boiling point spectrum. Since analytes are always in the vapor phase, there are no issues with freezing light components or releasing quickly heavy analytes into the second dimension column as in conventional thermally modulated GCxGC systems. Various column combinations in the first and second dimension are discussed to show gas and light hydrocarbon separations starting with methane at the light end to heavy petroleum fractions over C80 including crude oil at the upper boiling point range. Multidimensional Separations Symposium Paper Presentation

Abstract# 22 - 2:00 PM - 30 minutes – Iris - Wednesday

"Parallel Gas Chromatography for On-line Analysis of Reactor Effluents from Synthesis Gas Reactions"

Chao Xu; Stacey Beyer; Eric Schmidt; Mubasher Bashir; Valerie Mertens; Rob Edam - *The Dow Chemical Company*
Advanced process gas chromatography (GC) instrumentation, in combination with a parallel chromatography approach, give process GC a unique advantage in fully automated on-line monitoring of process streams for manufacturing and research applications. This presentation provides an overview of a process GC method that has been developed to analyze complex reactor streams for catalyst research of synthesis gas conversion. The analysis was split into multiple separation trains with each utilizing a different column stationary phase and detector configuration, e.g. fixed gases, hydrocarbons and oxygenates. This approach has resulted in a fast, tunable, and comprehensive analysis method for synthesis gas research. Multidimensional Separations Symposium Paper Presentation

Abstract# 23 – 11:00 PM - 20 minutes – Orchid - Wednesday

“Reliable Analysis of the Light Ends of Petroleum Fractions and Crude Oil Using Capillary Flow Backflush Technology” *Roger L Firor - Agilent Technologies*

The concept of backflushing in gas chromatography has been a mainstay of many petrochemical applications for over 40 years. Precolumn backflush can now be implemented in capillary-only systems using either a standard split/splitless inlet or multimode inlet (MMI). Capillary flow technology is a new approach to the time-tested practice of backflushing in petrochemical analysis. It utilizes a purged ultimate union with virtually zero dead volume and inert connections, as well as precise midpoint pressure control, for high resolution separations. The end result is the ability to fine-tune backflush times to produce precise fraction cuts, with less maintenance and better thermal control than conventional backflush technology. Paper Presentation

Abstract# 24 - 10:45 AM - 20 minutes - Exhibit Hall - Wednesday

“Enhanced LNG Sulfur Stability in Sulfinert versus Stainless Steel Sample Cylinders” *Silvia Martinez - Restek Corporation*
Accurate analysis of sulfur compounds in refinery feedstocks, process plant streams and gas fuels delivered by pipeline has become increasingly significant with industry standards and the global expansion of fuel markets. Sulfur compounds are reactive to stainless steel surfaces, easily adsorbing and showing losses within minutes or hours. Sample cylinders passivated with a Sulfinert coating are ideal for collecting and storing fuel gases containing reactive Sulfurs. The Sulfinert surface, consisting of a chemically-bonded fused silica layer, provides the inertness needed for the highly-reactive sulfur compounds, down to ppbv levels. A storage stability test of LNG Ethyl mercaptan over 30 days in a Sulfinert-passivated sample cylinder versus a stainless steel sample cylinder showed superior stability, as demonstrated by considerably greater recoveries. Poster Presentation

Abstract# 25 - 2:20 PM - 30 minutes – Hibiscus - Tuesday

“New X-Ray Fluorescence (XRF) designs for Petroleum and Polymer Challenges” *Al Martin - Thermo Fisher Scientific*
The petroleum and polymer industries have a huge challenge in providing analysis of materials which seem to be in a continual state of flux. Chemical makeup of polymers, lubricants, and fuels are altered constantly to meet new functionality demands. To meet this challenge, the analyst must be able to rely on a system which will not only satisfy today's requirements but also tomorrow's needs. Thermo ARL XRF offer systems which option variations on each instrument allowing flexibility guaranteed to meet your needs today as well as tomorrow. The systems in this discussion range from a basic 50W WDXRF system which can also be configured as an ULS unit or a combination of low S and additive analyzer; a higher powered system which has enough options to satisfy every XRF application need you may ever face; to an EDXRF system with its own special brand of uniqueness. Paper Presentation

Abstract# 26 - 1:00 PM - 20 minutes – Daffodil - Tuesday

“PPM Level Biodiesel Detection with a Portable Analyzer” *Sandy Rintoul - Wilks Enterprise, Inc.*

ASTM D-975 allows B5 in diesel without biodiesel content labeling. Many pipeline operators and end users have requirements for no biodiesel. For example, nuclear power plants cannot risk clogged filters from microbial growth in biodiesel shutting down emergency generators that operate pumps for decay heat removal. For pipeline and tank operators, if biodiesel is shipped they could risk the presence of residual biodiesel. The InfraSpec VFA-IR Spectrometer can now measure below 500 ppm biodiesel. On-site analysis at the fuel source takes less than a minute. Paper Presentation

Abstract# 27 - 10:50 AM - 30 minutes – Orchid - Tuesday

“A Novel Approach for the Determination of Total Sulfur and Halogen Species by Combustion Ion Chromatography” *Dr. Jay Gandhi, Dr. Joerg Kleimann, Dr. Christian Emmeneger - Metrohm USA*

The acronym RoHs stands for the directive on the «Restriction of the use of certain hazardous substances in electrical and electronic equipment». In response to the decreasing lifetime and the skyrocketing production of electronic and electrical equipment, the above directive aims at restricting the use of six hazardous species (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers) in manufacturing processes. In view of upcoming international regulations, a subject that will also gain paramount importance is the rapid and accurate monitoring of partly corrosive and toxic organohalogen compounds in challenging matrices such as coal, crude oil, naphtha, liquefied petroleum gas, etc. The most prominent techniques for halogen determination in these materials include inductively coupled plasma mass spectrometry (ICP-MS), ion selective electrodes (ISE) and ion chromatography (IC). However, the samples are often difficult to bring into solution and thus require complex and time-consuming sample preparation procedures. These problems can be overcome by using combustion IC: After an upstream thermal oxidative digestion, the liberated combustion gases are trapped in an oxidizing aqueous absorbant that can be directly injected into the IC. As described by the standard ASTM D 7359-08, halogens are determined as fluoride, chloride, bromide and iodide while sulfur compounds are determined as sulfate. Since combustion and absorption occur during the recording of the previous sample's chromatogram, the overall analysis time is short. This presentation highlights the applicability of automated combustion IC to the determination of trace halogenated and sulfur compounds in a wide variety of sample matrices. Paper Presentation

Abstract# 28 - 2:00 PM - 30 minutes – Orchid - Tuesday

“Improving the Reliability of Analytical and Sampling Systems in Challenging and Corrosive Environments” *Gary Barone, Marty Higgins, David Smith - SilcoTek Corp.*

Process analyzers and process sampling systems for petrochemical plants, refineries and off-shore platforms often times are exposed to challenging environments both internally and externally. Many sample streams are corrosive or contain active compounds that reduce lifetime or require extended preventative maintenance. Some systems are exposed to environments such as sea water which cause rapid deterioration of equipment requiring extra costs to keep running. This presentation will report data on the use of wear resistant, chemically inactive surface treatments to greatly reduce maintenance cycles and improve analytical reliability. Paper Presentation

Abstract# 29 - 2:40 PM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium “The QuEChERS Approach with GC- and GCxGC-TOFMS for Determining PAHs in Seafood after the Gulf Oil Spill” *Jack Cochran, Jason Thomas - Restek Corporation*
The Gulf oil spill is the largest environmental disaster in recent history and has caused the closing of fishing grounds due to possible food safety concerns. Although they are quickly metabo-

lized in finfish, polycyclic aromatic hydrocarbons (PAHs) might be present above food safety guidelines in some seafood as a result of this spill. We used the QuEChERS (Quick - Easy - Cheap - Effective - Rugged - Safe) extraction approach on seafood (shrimp, scallops, oysters, e.g.), evaluating its effectiveness for PAHs, polychlorinated biphenyls (PCBs), and organochlorine pesticides (OCPs). GC-TOFMS and GCxGC-TOFMS were used to quantify the extracted samples. Good recoveries were obtained for almost all PAHs, PCBs, and OCPs at the 100 and 10 ng/g levels, although interferences in GC-TOFMS prohibited accurate quantification for a few PAHs. Gulf Oil Spill Symposium Paper Presentation

Abstract# 30 - 4:00 PM - 30 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "Analysis of Aviation Turbine Fuel Containing Synthesized Hydrocarbons"

Brandy Sausse (PAC), Scott Berkhou (PAC)

In the private and government aviation industry, there has been a push to utilize synthetic jet fuels both for cost-saving efforts and for security reasons. ASTM recently passed a new standard for Aviation Turbine Fuel Containing Synthesized Hydrocarbons, D7566 09, to address these needs. This paper will summarize the results of several synthetic jet fuels. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 31 - 11:15 AM - 45 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "ESD Online Octane Rating System using the Falling Level Method"

Harry Rueckel (ESD), Walter Wulczak (ESD)

This presentation will cover the falling level system and how it is applied to the online determination of octane (known as the dynamic level method in ASTM D-2885). With almost no proprietary nor moving parts (except for magnetized solenoids and fuel pumps), the system has proven to be extremely reliable in 24-hour operation at the largest refineries. Advancements over the past five years will be covered as well as a discussion of approaches to improved operations and techniques learned at various installations. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 32 - 10:15 AM - 45 minutes - Vine I & II - Tuesday
Fuel Ratings Symposium 2010 "Independent Calibration of the Derived Cetane Number Instrument CID-510 and the Affects of Moisture" *Scott Berkhou (PAC), Pat Ritz (PAC), Thomas Herold (PAC)*

Alternatives to the standardized single cylinder cetane engine are increasingly gaining acceptance. The desire to develop a calibration scheme independent of the cetane engine has been expressed. In this paper the functionality of the CID-510 Constant Volume Combustion Chamber (CVCC) instrument used to measure the derived cetane number of diesel fuels will be described. Data demonstrating a direct calibration scheme for the CID-510 that yields a derived cetane number not dependent on correlation to a cetane engine will be presented. The effects on chamber wall temperature calibration by water dissolved in the calibration fluid and by moisture in the combustion chamber charge air will be discussed. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 34 - 10:00 AM - 30 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "The Physics of Octane and Cetane Measurements" *Robert Legg, Southwest Research, Inc.*

A basic understanding of the underlying physical phenomena occurring during the combustion event can be extremely useful to the engine operator in identifying problems that could have adverse effects on octane measurement. The interrelationship between the mechanics of the engine operation and the chemistry of combustion will be explored as well as the factors that can adversely affect the octane and cetane measurement. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 37 - 1:00 PM - 60 minutes - Ivy I & II - Wednesday

Fuel Ratings Symposium 2010 "HFRR Workshop - Testing and Best Practices" *Rich Baker, PCS Instruments*

The High Frequency Reciprocating Rig (HFRR) is reciprocating friction and wear test system which provides a fast, repeatable assessment of the performance of fuels and lubricants. It has become the industry standard test for diesel fuel lubricity and conforms to ASTM D6079, CEC F-06-A, ISO 12156, EN 590, JPI-5S-50 and IP 450. This workshop is being offered to discuss test procedures and best practices for the HFRR, including the automated digital wear scar camera overview. It will allow the workshop attendees hands-on experience with the HFRR and wear scar camera method and will be run by a PCS (manufacturer of the instrument) engineer. Fuel Ratings Symposium 2010 Workshop Presentation

Abstract# 38 - 1:00 PM - 60 minutes - Ivy I & II - Tuesday

Fuel Ratings Symposium 2010 "Advanced Engine Technology Ignition Quality Tester (IQTTM)"

Tom Bell - Exchange Group Data Services

This presentation will outline how the Ignition Quality Tester (IQTTM) Lab Model (LM) when employed with the specification test methods of ASTM D6890 and EN 15195 (IP 498) can be used by refineries to produce a substantial yearly savings as a result of more optimal blending practices when employed to meet minimum cetane number requirements. The process that Advanced Engine Technology Ltd. (AET), the manufacturer of the IQTTM, has utilized to further improve precision will be discussed. Specific examples and data will be provided for the effects of tightening the variation in ISO 4010 fuel injection nozzle selection and in maintaining fuel injection pump mass variation between prescribed limits. Further discussion will describe how the Refinery On-Line Model (ROLM) IQTTM can be employed to yield an additional 25 % improvement to precision relative to the Lab Model. An overview of the spinoff benefits of the Near - Totally Automated Lab Model (Near-TALM) will be provided. A discussion of IQTTM durability/ maintainability and technical findings of heavy usage refineries will be described. The experience gained by some of these refineries in completing over 25,000 standard tests in as little as five years will be highlighted. The presentation will conclude with a synopsis of how AET intends to meet its number one R&D priority, to further improve IQTTM precision in the medium term. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 39 - 11:15 AM - 30 minutes - Vine I & II - Tuesday

Fuel Ratings Symposium 2010 "Exchange Group Data Services" *Tom Bell, Exchange Group Data Services*

A presentation will be given of proposed services to provide the seven Regional Exchange Groups with data analysis services along with the operation of each groups exchange as to sample scheduling and membership maintenance. The data collection and analysis of the data will be the same as that done for the National Exchange Group (NEG) as a function of ASTM D02 Subcommittee 1. A question and answer session will follow the presentation. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 40 - 8:45 AM - 60 minutes - Ivy I & II - Wednesday

Fuel Ratings Symposium 2010 "OIL / GREASE IN (SEA) WATER PORTABLE & CFC-FREE, A New Mid-IR Laser Based Analyzer for Total Petroleum Hydrocarbons in Water" *Prof. B. Lendl, DI W. Ritter, DI Michael Strassl - QuantaRed Technologies GmbH, Institute of Chemical Technologies and Analytcs, Vienna University of Technology, Eralytics GmbH*

This presentation introduces the ERACHECK, the world-wide first field-proven analyzer for on-site measurement of total oil and grease (TOG) and total petroleum hydrocarbon (TPH) levels in water and soil samples employing mid-IR laser technology. The operating procedure of the Eracheck involves solvent extraction with cyclohexane (20:1) and subsequent measurement of the extracted hydrocarbons in this environmentally friendly solvent by IR transmission spectroscopy. This method is as simple, fast and

precise as former IR methods for TPH that were based on extraction with CFCs. It comes as a fully automated, portable instrument which can also be easily operated by non-experts directly in the field. The linear range of the ERACHECK extends from 0.5 2000 ppm / mg/L of TPH in water, waste water and sea water with typical precision of less than 4% across the whole calibration range. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 41 - 10:30 AM - 40 Minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "Tools of the CFR Trade" *Tom Kosik - Alberta Innovates*

As in any profession there are a number of invaluable tools that you need. Be it a pen for a writer or a wrench for an engine overhaul. Without the pen the writer would not produce that masterpiece that you read. So it is with the CFR operator that needs that special tool to fix that masterpiece of mechanical engineering we call the CFR test engine. The bottom line is that without the proper tools you cant do the job. What are the proper tools? Where do you find them? How do you use them properly? I am sure that many operators have look in drawer and said what the heck is this? In my presentation I plan on showing pictures of these unique tools having hands on displays and explaining the function and use of the specialized tools. The main focus on the presentation is to transfer information about the tools of the trade. Without the right tool or knowing what it looks like it can be difficult if not impossible to properly maintain the test engine. A regular hammer is not always the right tool in some cases a bigger hammer is needed. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 42 - 9:45 AM - 40 minutes - Ivy I & II - Wednesday
Fuel Ratings Symposium 2010 "5th Generation of Automatic atmospheric distillation instrument model NDI 450" *Julien Brosse, NORMALAB*

The presentation will start with a description of the instruments general features and technology used to ensure a control of the distillation process. We will then go deeper into a user oriented presentation of the software from creating a product file, setting the access levels, launching a test up to the result transfer and analysis, covering basic maintenance and calibration. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 43 - 9:00 AM- 60 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 - Key Note Address "Technology in IC Engines, Future Fuels, and the Impact on the Fuel Rating Industry" *Jeff Bizub - DresserWaukesha*

This presentation will touch on all fuel types which utilize fuel rating instruments under the auspicious of ASTM D02.01. Primary focus being future variations on gasoline, diesel, aviation gasoline, and other yet undefined fuels as driven by engine design changes to meet legislation, economics, and Being Green demands. Fuel Ratings Symposium 2010 - Key Note Address Paper Presentation

Abstract# 44 - 8:30 AM - 2 hours - Vine I & II - Wednesday
Fuel Ratings Symposium 2010 "How to be Successful with CVCC" *Dr. Michael Croudace, Compass Instruments, Inc. - Jeff Bizub (DresserWaukesha), Nathan Pekoc (Compass Instruments, Inc.), Tom Bell (Exchange Group Data Services), Pat Ritz (PAC), and others*

This will be a usersworkshop in a panel discussion format. The topics covered will be applicable to all CVCC products sold and provide a DCN result. Users and manufacturers experts have been invited to participate on the panel. Topics which are scheduled to be discussed include but are not limited to: A) Importance of Combustion Air Quality, B) Fuel Issues like Handling, Filtering, Hysteresis, MCH, etc, C) Maintenance Activities, D) Interpreting Results, and E) Troubleshooting, etc. Fuel Ratings Symposium 2010 Workshop Presentation

Abstract# 45 - 4:00 PM - 60 minutes - Vine I & II - Tuesday
Fuel Ratings Symposium 2010 "XCP -The Next Generation of CFR Control Systems" *Jeff Balis - DresserWaukesha*

This presentation will be an in depth coverage of what is XCP, why was done, and where does DresserWaukesha plans to take it in the future. The Round Robin and subsequent method changes that are going thru the ASTM Balloting process. What are the features, benefits, and options available. What does a unit upgrade involve. What can and cant be upgraded and why. And what will happen with the 501C Detonation Meters. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 46 - 1:00 PM - 4 hours - Off-site Laboratory Visit - Wednesday

Fuel Ratings Symposium 2010 "XCP Live Demo with Hands on Opportunity" *Tour Guide: Bob Stamp, Compass Instruments, Inc. Demo by: Mike Burnett (Compass Instruments, Inc.), Dan Bemis (DresserWaukesha)*

Take a road trip and see an actual running installation utilizing the New XCP Control System. Take a turn in the drivers seat. Get first hand experience on how truly easy it is to operate. Get a sample Test Report to take back to the boss. Be amazed by the hands off operation and incredible repeatability of the DresserWaukesha Falling Level Bowls. Reservations required in advance and limited to 6 for each session. Transportation will be provided free of charge. Fuel Ratings Symposium 2010 Demonstration

Abstract# 47 - 3:30 PM - 30 minutes - Vine I & II - Tuesday
Fuel Ratings Symposium 2010 "CFR Engine Maintenance - Cetane" *Dan Bemis - DresserWaukesha*

This presentation will be focus on best practices with attention given to special consideration when dealing with Biodiesel samples. Come and learn about special points in the ASTM D613 Method, what it takes to clean an injection nozzle and why, Demystify cleaning of the Handwheel, etc. Included will be plenty of lessons learned with plenty of time for open discussion. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 48 - 3:00 PM - 30 minutes - Vine I & II - Tuesday
Fuel Ratings Symposium 2010 "CFR Engine Maintenance -Cooling System" *Mike Brunett - Compass Instruments, Inc.* This presentation will be focus on best practices with attention given to special consideration when dealing with high mineral content utility water. Included will be lessons learned with plenty of time for open discussion. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 49 - 2:00 PM - 60 minutes - Vine I & II - Tuesday
Fuel Ratings Symposium 2010 "The Easy Way, or the Right Way" *Thomas Jones - Compass Instruments, Inc.*

The presentation will explain the importance of proper operation and maintenance techniques. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 50 - 10:30 AM - 30 minutes - Ivy I & II - Wednesday
Fuel Ratings Symposium 2010 "CFR Engine Operation & Maintenance - Open Discussion"

Panel: Dan Bemis (DresserWaukesha), Tom Jones (Compass Instruments, Inc), Mike Burnett (Compass Instruments, Inc), and others

This will be an open forum so bring your questions and try to stump the experts. All relevant topics welcome especially those hard lessons learned case studies. Any special requests will be considered and appreciate if topics are submitted in advance. Fuel Ratings Symposium 2010 User Discussion

Abstract# 51 - 1:00 PM - 60 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "Rating Fuels by the Dynamic Falling Level, Operation and Maintenance"

Antonio Trinidad (Valero), Manuel Garbalena (Valero)
The presentation will deal with the rating of fuels by the dynamic

falling level using the ESD Laboratory Analyzer. Other topics include the importance of setting the octane spread, the blending of reference fuels-manual or automatic, engine standardization, quality control and minor engine maintenance. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 52 - 10:30 AM - 60 minutes - Vine I & II - Wednesday
Fuel Ratings Symposium 2010 "Vapor Pressure Measurement Of Gasoline, Crude Oil & LPG With New ASTM D5191 & D5188 Speed Test" *Philipp Jordan, Eralytics GmbH*

This presentation introduces the ERAVAP, the world-wide first analyzer for the fully automated vapor pressure measurement of gasoline, crude oil and LPG with a single portable instrument. Additionally the vapor liquid ratio temperature of gasoline (ASTM D5188) and the vapor pressure of gasoline (ASTM D5191) can be measured fully automatically with ERAVAPs so called Speed Test. Both measurements are started with a push-of-a-button and both results are displayed and stored under the same sample ID. ERAVAPs innovative and maintenance free measuring principle in combination with the built-in measuring cell shaker guarantee extremely fast and still highly precise VP measurements in full compliance to all the latest ASTM vapor pressure standards. A built-in industry PC with Ethernet and USB interfaces allows for advanced data management and direct LIMS connectivity. The intuitive menu structure on the large, industry proven color touch screen ensures easiest operation and even allows for statistical quality assurance according to ASTM D6299 with graphical control charting of up to 8 different QC-sample profiles directly on the ERAVAP. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 53 - 3:00 PM - 60 minutes - Ivy I & II - Tuesday
Fuel Ratings Symposium 2010 "Detailed Mid-FTIR Analysis Of Gasoline, Diesel & Jet Fuel With A Single Portable Analyzer In Seconds" *Philipp Jordan - Eralytics GmbH*

This presentation introduces the ERASPEC, the world-wide first mid-FTIR fuel analyzer for the detailed analysis of gasoline, Diesel & Biodiesel (FAME) as well as jet fuel with a single portable instrument. ERASPEC is a compact, rugged stand alone analyzer designed for fast fuel tests in the laboratory as well as directly in the field. The innovative, patented and maintenance free FTIR design reduces the warm-up time to 30 seconds and the fully automated measurement to 60 seconds. No sample preparation, instrument calibration or spectroscopy know-how is required. More than 40 different parameters (like aromatics, oxygenates, olefins, etc.) and properties (like Octane & Cetane numbers, Distillation properties, RVP, Density, etc.) of gasoline, diesel and jet fuel are determined on the push-of-a-button. Results and fuel spectra can be viewed, compared and analyzed anytime on a large color touch screen. Up-to 3000 results and spectra are saved in the internal memory and can easily be downloaded to standard USB flash drives. A built-in industry PC with Ethernet and USB interfaces allows for advanced data management and direct LIMS connectivity. Fuel Ratings Symposium 2010 Paper Presentation

Abstract# 54 - 9:00 AM - 4 hours - Ivy II - Thursday
Fuel Ratings Symposium 2010 "Great Lakes Regional Group"
Fuel Ratings Symposium 2010 User Group Meeting

Abstract# 55 - 9:00 AM - 4 hours - Ivy I - Thursday
Fuel Ratings Symposium 2010 "Rocky Mountain Regional Group"
Fuel Ratings Symposium 2010 User Group Meeting

Abstract# 56 - 9:00 AM - 4 hours - Vine I - Thursday
Fuel Ratings Symposium 2010 "Texas Regional Group"
Fuel Ratings Symposium 2010 User Group Meeting

Abstract# 57 - 11:00 AM - 20 minutes - Exhibit Hall - Wednesday
"Determination of Elements at Sub-ppb Concentrations in Naphtha Mixtures Using the Perkin Elmer NexION 300 ICP-MS" *Stan Smith - Perkin Elmer*

Analysis of trace metals in organic matrices such as naphtha by ICPMS has historically been very challenging. ICPMS technology has the sensitivity and multi-element capabilities desired but there are many hurdles that must be overcome such as overloading the plasma with vapors from the solvent, carbon deposit build up on the sampler cone, and interferences from carbon-based polyatomic species. Naphthas are particularly challenging due to their broad range of hydrocarbon distribution and boiling point ranges. Using the NexION 300 ICP-MS, several naphtha compounds were successfully analyzed using a single set of calibration standards and operating conditions, demonstrating the accuracy and stability of the method. Poster Presentation

Abstract# 58 - 2:00 PM - 20 minutes - Wisteria - Tuesday
"Dirty Bombs and Liability Exposure in the Petroleum Industry" *Robert C. Tisdale, Ph.D. & Ray R. Fleming - MIG LP*
Globally, the petroleum industry continues to employ tens of thousands of radioisotopes in activities that range from exploration and production to distribution. The presence of these radioisotope sources, in such vast numbers, represents a statistically significant opportunity for theft and subsequent misuse. Governments worldwide now regard radiological terrorism, through the use of radiological dispersive devices (RDD) - often called dirty bombs, to be far more likely than use of a nuclear explosive device. In the context of the recent Deepwater Horizon Incident in the Gulf of Mexico, it is incumbent on the petroleum industry to evaluate liability exposure relative to its radioisotope inventory. Paper Presentation

Abstract# 59 - 1:00 PM - 40 minutes - Wisteria - Tuesday
"Pushing the Performance Envelope for the Trace Measurement of Elements in Hydrocarbon Streams"
Stan Smith - Perkin Elmer

The analysis of petroleum hydrocarbon samples by ICP and ICP-MS pose many challenges. Productivity and performance requirements still need to be met despite these challenges. Many of the goals and objectives for petroleum analysis are the same as for other matrices; run more samples in less time, increase instrument uptime, reduce maintenance, improve sample introduction, and improve sensitivity and detection limits. There are sample introduction accessories and equipment as well as techniques that can be employed to achieve these goals. These can be applied separately or in combination to instrumentation for both ICP and ICPMS. Paper Presentation

Abstract# 60 - 11:20 AM - 20 minutes - Exhibit Hall - Wednesday
"Evaluation of Several Methods For Post-Extraction GPC Clean-up of Fish Tissue Prior to PBDE and PCB Analysis" *Michael Halvorson (Gilson, Inc., Middleton, WI) Thomas Gibson, Carol Buelow and Curtis Hedman (Wisconsin State Lab of Hygiene, Madison, WI)*

Gel Permeation Chromatography (GPC) is an effective post-extraction clean-up method for the removal of high molecular weight interferences from sample extracts prior to analysis by GC. GPC clean-up is often used for fish tissue extracts with high lipid content prior to analysis for halogenated compounds such as PBDEs, PCBs and chlorinated pesticides. The purpose of this study was to evaluate several columns and solvents for the clean-up of fish tissue extracts prior to analysis for PCBs and PBDEs. Comparison of GPC eluent times, lipid loading capacity and recoveries from fish tissue for each column and mobile phase were determined. Poster Presentation

Abstract# 61 - 11:40 AM - 20 minutes - Exhibit Hall - Wednesday
"Applications of TG-MS and TG-GC-MS to Polymers" *Peter Muller, Justin Lang, Peng Ye - PerkinElmer, Inc.*

The combination of Thermo-Gravimetric Analyzers (TGA) with Fourier Transform Infrared spectrometers (FTIR) or with Mass Spectrometers (MS) to analyze the gases evolved during a TGA

analysis is a fairly well known technique. However, with TG-FTIR or TG-MS it is difficult to differentiate gases that evolve simultaneously. Combining thermogravimetry with mass spectrometry and with gas chromatography-MS allows for a more complete characterization of the material under analysis and precisely determines the products from the TGA. Poster Presentation

Abstract# 62 - 9:15 AM - 45 minutes – Hibiscus - Wednesday
“Breakthrough Hyphenated Techniques for Polymer Characterization: DSC-Raman, TGA-MS, TGA-GC-MS, and TGA-IR”

Peter Muller, Justin Lang, David Norman - PerkinElmer, Inc.
Analytical instrument hyphenation is a technique to connect multiple instruments for the collection of unique information during a single run. Breakthrough combinations of thermal analysis and spectroscopic instruments provide laboratories with unique tools for polymer characterization. A hyphenation of dual furnace calorimetry and Raman spectroscopy enables the simultaneous measurement of quantitative enthalpic processes while providing chemical and structural information. TGA-MS and TG-GC-MS provides separation and identification correlated with sample temperature. Paper Presentation

Abstract# 63 - 1:00 PM - 20 minutes - Exhibit Hall - Wednesday
“Combined DSC-Raman to Polymer and Pharmaceutical Characterization”

Justin Lang, Peter Muller, Peng Ye - PerkinElmer, Inc.
Raman spectroscopy and Differential Scanning Calorimetry (DSC) are complementary techniques that are often applied to the same problems, principally to study phase transitions in solids but also to monitor reactions such as curing of resins. Simultaneous Raman and DSC measurements add a qualitative dimension to DSC data which simply measure heat flow. Poster Presentation

Abstract# 64 - 10:00 AM - 20 minutes – Wisteria - Tuesday
“Quantitative Analysis of Phytoestrogen Compounds from Urine by Trap-and-Elute HPLC-ESI-MS”

Samuel H. Yang, Aaron A. Morgan, Kevin A. Schug - University of Texas at Arlington*

Phytoestrogens are a class of endocrine disruptors that are naturally occurring from the environment. A method is presented for analysis of an array of phytoestrogens and their metabolites from urine. The method features a streamlined sample preparation strategy prior to analysis by trap-and-elute chromatography with restricted access media coupled to ESI-MS. Metabolite screening was enhanced by the mass resolution capabilities of an ion trap time of flight hybrid mass analyzer. Detection limits in the parts-per-trillion range have been achieved. An application is presented demonstrating viability of the method towards monitoring of phytoestrogen levels after ingestion of soy-based supplements. Paper Presentation

Abstract# 65 - 1:20 PM - 20 minutes - Exhibit Hall - Wednesday
“A Comparison of Porous Layer Open Tubular (PLOT) Columns for the Separation of Refinery Gases”

Robert Wiedemer, Rob Bunn, Tony Edge - Thermo Fisher Scientific
Porous Layer Open Tubular (PLOT) columns are well suited for the analysis of light hydrocarbons such as those found in refinery gases. These highly selective columns are capable of separating low molecular weight hydrocarbons at above ambient temperatures. An increasingly wide variety of PLOT column coatings are available, including alumina deactivated with Na₂SO₄ and with KCl, as well as a range of porous polymers with varying degrees of polarity. This presentation will show the differences in selectivity of numerous types of Thermo Scientific TracePLOT columns as demonstrated by the differences in the separation of light hydrocarbons. Poster Presentation

Abstract# 66 - 3:40 PM - 30 minutes - Ivy I & II - Wednesday
“Analysis of Oily Residues in LPG, by Gas Chromatography”
Lenny Kouwenhoven - Da Vinci Europe Laboratory Solutions

Quantitative detection of high boiling components in low boiling matrices is a recognized analytical challenge. The relatively long transfer lines in today's used injection systems cause retention and or adsorption of components. The solution for a safe and accurate analysis of these complicated matrices is the Liquefied Gas Injector (LGI) developed by Shell Global Solutions in close cooperation with Da Vinci Europe laboratory solutions. By injecting under high pressure directly on the GC column this special injector prevents any discrimination and fractionation, which will occur when using a vaporizer and heated transfer line. Paper Presentation

Abstract# 67 - 2:00 PM - 60 minutes – Daffodil - Tuesday
“Parameter Selection and Optimization in IR and Raman Spectroscopy” Part I

Dean Brown - PerkinElmer
FTIR and Raman Spectroscopy are widely used in materials characterization for qualitative and quantitative analysis. Understanding the measurements process and the parameters that can be changed to get the optimal results will be discussed. Exceeding instrumental limitations can lead to erroneous data. The characteristics of a “good” and “bad spectrum” will be shown and what one can do to optimize their measurement. Workshop Presentation (Part I)

Abstract# 68 - 11:30 AM - 30 minutes – Wisteria - Tuesday
“Advances in Differential Scanning Calorimetry: Highlighting New Test Methods and Data Analysis”

Justin Lang, Peter Muller, and David Norman - PerkinElmer
Differential scanning calorimetry (DSC) is a powerful experimental technique which can be utilized throughout product development. The goal of this presentation to introduce advanced hardware and software options provided by PerkinElmer. This includes automated data analysis, report generation, HyperDSC, StepScan-DSC and new noise reduction technologies. During this introduction, experimental and data analysis methods of commonly requested DSC measurements will be covered. This includes the identification and calculation of cloud point, glass transition, melting, crystallization, and enthalpic changes. Paper Presentation

Abstract# 69 - 2:00 PM - 60 minutes – Wisteria - Tuesday
“Analysis of Aviation Turbine Fuel Containing Synthesized Hydrocarbons” *Brandy Sausse, Scott Berkous - PAC*

In the private and government aviation industry, there has been a push to utilize synthetic jet fuels both for cost-saving efforts and for security reasons. ASTM recently passed a new standard for Aviation Turbine Fuel Containing Synthesized Hydrocarbons, D7566 09, to address these needs. This paper will summarize the results of several synthetic jet fuels. Paper Presentation

Abstract# 70 - 10:30 AM - 40 min – Daffodil - Tuesday
“Determination of Ethanol Content of Denatured Fuel Ethanol by Infrared Spectroscopy - A Twenty Second Alternative Test to a Forty Minute GC Analysis” *Larry Spino, Pat Ritz - PAC*

The current standard for measuring the ethanol content of denatured fuel ethanol is described in an ASTM method, D5501. This is a gas chromatography method that takes over 40 minutes to ramp up temperature and cool down. New techniques in infrared spectroscopy and microelectronics now allow a user to obtain similar data in seconds rather than minutes and at a fraction of the cost. This paper will explore the use of spectroscopy to address the biofuels industry need for accuracy and speed in the determination of the ethanol content in denatured fuel ethanol. Paper Presentation

Abstract# 71 - 1:40 AM - 20 minutes - Exhibit Hall - Wednesday
“FTIR Analysis of Trace Water in Anhydrous Ammonia” *Jesus Anguiano - CONSCI*

This presentation will outline the advantages of using FTIR analysis for moisture contamination in Anhydrous Ammonia at low levels. Sampling and analyzing water is challenging due to its

presence in nearly all aspects of the analytical procedure. When using FTIR for the measurement of contaminants in a product, the matrix itself may interfere to a large degree with the contaminants of interest. To overcome this problem we can avail ourselves of software tools in the data system. This is done by zeroing on a known dry source of ammonia followed by measurement of the unknown product against this baseline value. Poster Presentation

Abstract# 72 - 1:50 PM - 30 minutes - Floral Hall A - Tuesday
Gulf Oil Spill Symposium "Overcoming The Bottlenecks In Marine Tissue Analysis Through Improved Sample Preparation" *David E. Knowles, Bruce E. Richter, Richard E. Carlson, Brett J. Murphy - DIONEX*

One of the effects of the Gulf Spill is the need for laboratories to analyze many more samples. The process of acquiring a sample, preparing the sample for extraction, extracting the sample, clean up of the extract and finally a chromatography run of the extract is time consuming. It can take days for this entire process. One of the major time bottlenecks is the extraction and clean up. Ways to speed this portion of the process up will be beneficial to all who are waiting for the results. Federal and state agencies have developed methods for this work. This presentation will focus on ways to speed up the solvent extraction and extraction clean up. Dramatic time savings will be achieved without sacrificing the final results. Suggestions will be offered on how to use this information to enhance laboratory throughput on samples involving seafood matrices such as shrimp, oysters, clams, etc and on soil and sediments. Gulf Oil Spill Symposium Paper Presentation

Abstract# 73 - 3:00 PM - 60 minutes – Daffodil - Tuesday
"Mid-IR, Near-IR, Raman Spectroscopy: Which Technique to Choose for My Application Part II"

Dean Brown - PerkinElmer

Mid-IR is most often used for qualitative analysis because of the "finger print" region and its specificity in identifying materials. However, it has the limitations of not being able to measure through glass or aqueous solutions. NIR-IR overcomes the aforementioned limitations of MID-IR but loses the specificity of the "finger print" region for identifying materials. Raman spectroscopy exhibits the finger print region and can measure samples through glass or in the presence of water. Raman also has its limitations. The advantages and disadvantages of each technique will be discussed. Workshop Presentation (Part II)

Abstract# 74 - 9:30 AM - 20 minutes - Exhibit Hall - Wednesday
"Quantitative Applications of Single and Multi-Reflection Diamond Attenuated Total Reflection Measurements.(FAME,EtOH)" *Dean Brown - PerkinElmer*

Historically, quantitative FTIR methods for liquids required measurement in liquid cells in transmission mode. Attenuated Total Reflectance (ATR) is now the primary sampling accessory for the analysis of liquids and solids. Top plates can be interchanged to increase the number of reflections to expand the dynamic range. However, diamond ATR accessories were considered not suitable for quantitative analysis for two reasons. First, there is no physical fixed pathlength and second, the depth of penetration into the sample varied with wavelength. The efficacy of using a single reflection diamond ATR (UATR) for the quantitative determination will be shown. Poster Presentation

Abstract# 75 - 11:10 AM - 20 minutes – Orchid - Tuesday
"Expanding Horizons in Excimer UV Fluorescence" *Franek Olstowski - ATOM Instrument Corp.*

Since its introduction, Excimer UV Fluorescence has proven to be a major advancement in the detection and measurement of sulfur dioxide when applied to the analysis of Total Sulfur. The patented Excitron™ Excimer technology features high sensitivity, superior nitrogen rejection and exceptional emission stability making it ideal for analyzing low sulfur in fuels and applications with high nitrogen content, including fuel additives. These benefits continue to be verified on an increasing number of commercial instruments and

fully complies with both ASTM D5453 and D6667 methods. An advanced, stand-alone detector has now been developed specifically for this excitation source with an innovative design that optimizes response and notably improves achievable sensitivity, extending both capabilities and potential applications. The enhanced sensitivity and low nitrogen interference has demonstrated ASTM D5453 performance criteria can be achieved utilizing air instead of oxygen as the combustion gas, greatly increasing operational safety. The fast detector response time also allows a significant reduction in total gas consumption, substantially reducing utility requirements and overall operating costs. In addition, extended linearity and an extremely wide dynamic range enable a diverse series of sample concentrations to be analyzed with a single method. Actual field data will be presented that illustrate the unrivaled analytical performance and benefits of this effective and cost-saving approach to Total Sulfur analysis. Paper Presentation

Abstract# 76 - 9:30 AM - 30 minutes - Floral Hall A - Tuesday
Gulf Oil Spill Symposium "Advanced Analytical Technologies for Analyzing Environmental Matrixes Contaminated with Petroleum Hydrocarbons" *James D. McCurry, Michael Szelewski, and Joni Stevens - Agilent Technologies*

Various packaged methods will be discussed for analyzing VOCs, Semi-VOCs, petroleum hydrocarbons, PAHs in marine water, sediment, and seafood. Advanced technologies are used to increase sample analysis productivity and enhance detection limit, including QuEChERS with dispersive SPE for clean up; GC with capillary flow technology backflush; LTM-GC; GC/MS, GC/MS/MS and LC/FLD. Paper Presentation

Abstract# 77 - 1:30 PM - 30 minutes - Vine I & II - Wednesday
"Analysis of LPG Residue by Thermal Desorption Gas Chromatography" *Lee Marotta, Heidi Grecsek, and Leeman Bennington - PerkinElmer*

As LPG is transported through pipelines, hoses, and tanks it comes into contact with many contaminants, potentially resulting in a heavy residue in the LPG. This residue, when left unchecked can harm seals, valves, and even engines. Understanding the composition of this residue is important to determine the source of problems found at consumers sites. Currently the only LPG residue test method is an ASTM method D2158 (evaporation method). This only provides a total number for the residue and no details. This presentation will show new work being done to provide a detailed residue analysis as well as quantification of each residue impurity. Utilizing a thermal desorption technique to trap the residue in the LPG samples allows for easier sampling and additional analyte focusing for greater sensitivity. Paper Presentation

Abstract# 78 - 10:20 AM - 20 minutes - Exhibit Hall - Wednesday

"Analytical Applications By Ultra Fast Gas Chromatography" *Aaron Mendez and Vincent Otten - PAC*

A new classification of Gas Liquid Chromatography has emerged where the classification is associated with the speed of heating and cooling the column. High throughput without sacrificing the quality of the analysis is vital for many sectors of the industry and for many quality control labs. We have developed a series of analytical applications under ultrafast gas chromatography conditions in which a special capillary column is heated directly by a Microwave Energy in a very controlled way. The applications discussed in this work utilize a specially coated 0.32 mm id capillary column, a fast heating TPI Inlet and a conventional FID detector. Heating and cooling rates of up to 350 oC/min had been applied to study boiling range distributions of gasoline, jet fuels, diesel and biodiesel formulations. FAME contamination of jet fuels have also been analyzed by SPME GC. Cycle times of less than 3 min can be obtained with excellent repeatability and Reproducibility. Additionally several excellent correlations to conventional methodologies have been obtained. Poster Presentation

Abstract# 79 - 3:20 PM - 20 minutes – Orchid - Tuesday

“Challenges of Using D7169 for the Simulated Distillation of Crude Oils in the Sulfur Mode”

Nelson Carvajal, Roberto Meneghini and Joaquin A. Lubkowitz - Separation Systems

The use of ASTM method D7169 for sulfur SIMDIS of crude oil presents several analytical difficulties and challenges. It not only requires the use of the correct hardware i.e. a sulfur chemiluminescence detector coupled to an FID as well as a dedicated software to carry out the SIMDIS calculations and reports for both the sulfur and the hydrocarbon channel. In addition there are some chemical issues that have to be dealt with such as solvent selection for dilution of sample and the standards. This paper discusses the difficulties including a potential solution for the sulfur recovery. Paper Presentation

Abstract# 80 - 10:30 AM - 30 minutes – Iris - Tuesday

“Characterization of Bio-source Materials and Fluids by GC with Infrared Detection” *Terry L. Ramus, Scott J. Hein and David A. Grudowski - Diablo Analytical, Inc.*

New proposed sources of energy include the utilization of a variety of biomass, waste or plant material. These biomass source materials must be processed or transformed into useful and consistent process fluids that can be moved through a production facility toward a final fuel product with predicatable properties or for utilization in a power generating device. The biomass source material as well as process fluids must be characterized as these materials are evaluated for potential in the energy market. Gas Chromatography (GC) is an established high resolution technique and vertical-drop microfurnace pyrolysis is a reproducible device for the introduction of solid and heavy biomass source materials into GC. We can detect the components after separation by GC with many detectors. However, the functional groups contained in most of these components can be quickly identified and characterized by infrared detection. This presentation will demonstrate this approach to characterization of these materials and fluids. Paper Presentation

Abstract# 81 - 10:00 AM - 20 minutes - Exhibit Hall - Wednesday

Gulf Oil Spill Symposium “Characterization of Dispersants by Reversed-Phase High Pressure Liquid Chromatography and Charged Aerosol Detection” *Matthew Neely, Marc Plante, Bruce Bailey, Ian Acworth - ESA - A Dionex Company*

An HPLC method for quantification of dispersants, used to treat oil in the recent Gulf of Mexico drilling incident, is an analytical challenge: these dispersants lack a chromophore, which limits the sensitivity of ultraviolet detection for these analytes, and they are also non-volatile, limiting the use of highly sensitive gas-chromatography analysis. A reversed-phase HPLC method is presented that will provide the characterization stage for development of a quantitative method for these analytes. The Corona ultra charged aerosol detector was used to provide chromatograms of nine different dispersants: Aerosol-OT,* SPAN-20, SPAN-60,* SPAN-80,* SPAN-83, SPAN-85, TWEEN-80,* and TWEEN-85.* (*used in COREXIT 9500). Poster Presentation

Abstract# 82 – 1:40 PM - 20 minutes – Wisteria - Tuesday

“Characterization of Polyurethanes by Pyrolysis GC with Infrared Detection” *Terry L. Ramus and Scott J. Hein - Diablo Analytical, Inc.*

Polymers are often characterized by pyrolysis with Gas Chromatography (GC). The development of vertical-drop microfurnace pyrolysis technology allows this work to be accomplished with excellent reproducibility and with quantitative results. Typically, pyrolysis-GC is used with mass spectrometry (MS) or other detectors such as flame ionization (FID). The functional groups that result from pyrolysis of polyurethanes include many carbonyl, hydroxyl and isocyanate groups. Pyrolysis GC with infrared detection allows rapid characterization of polyurethanes. This presentation will demonstrate these results. Paper Presentation

Abstract# 83 - 2:00 PM - 30 minutes - Vine I & II - Wednesday

“Determination of Low Level Methanol in Crude Oils (ASTM D7059-04) Improved by New Micro-Channel Flow Technology in Gas Chromatography” *Heidi Grecsek, Lee Marotta, and Andrew Tipler - PerkinElmer, Inc.*

Methanol is added to crude during the drilling process to prevent the formation of hydrides. Testing for methanol must typically be compliant with the current method ASTM@D7059. In addition, in order to continue uninterrupted production of crude oil, the method must also be fast, simple, and require low maintenance. This report will show a new Swafer” micro-channel flow switching technology and updated methodology to decrease maintenance requirements and increased throughput for this method. Along with significant updated method benefits, the crude oils tested demonstrated a detection level of less than 0.5 ppm, meeting even the most demanding global requirements. Paper Presentation

Abstract# 84 - 3:00 PM - 20 minutes – Orchid - Tuesday

“Detailed Hydrocarbon Analysis In 10 Minutes At The Parts Per Million Levels In Exhaust Gases”

Claudio M. Ceccarelli, Nelson Carvajal, Roberto I. Meneghini and Joaquin A. Lubkowitz - Separation Systems Keith L. Olsen, General Motors, Warren, Michigan

Combination fast oven heating and fast programmable secondary ovens with cryocooling has enabled the detection and quantitation of hydrocarbon exhaust gases and other sources at the level of 1-500 ppm (w/w). The low levels of hydrocarbons required the design of heat traced traps in order to preconcentrate the samples over 1000 fold. The analysis is increased by utilizing a separate oven with cryogenic control which analyzes the C1-C5 hydrocarbons including the C4 olefins in about 5 minutes. The Hydrocarbon from C5-C13 are identified and quantified with DHA software modified for gas analysis. In addition to the identification, the ozone contribution of these compounds is also determined. Paper Presentation

Abstract# 85 - 11:00 AM - 20 minutes – Iris - Tuesday

“Real-time Direct MS Detection of Syngas Related Components for Rapid Process Characterization”

Terry L. Ramus and Scott J. Hein - Diablo Analytical, Inc.

Syngas and related mixtures are generated from a range of source materials. Recent alternative energy efforts have generated syngas or syngas-like mixtures from a wider range of biomass or waste related source materials. This presentation will demonstrate the rapid and quantitative monitoring of these gas streams and related components by real-time and direct MS detection. We will show other non-energy related applications of real-time MS detection. Paper Presentation

Abstract# 86 - 3:40 PM - 30 minutes – Orchid - Tuesday

“Simulated Distillation (D7169) Improved by Merging a DHA Front End Analysis by Gas Chromatography”

Terry Osenbach, Heidi Grecsek, and Lee Marotta - PerkinElmer, Inc.

Simulated Distillation (SimDis) is the determination of the boiling range distribution of petroleum fractions by GC. It is an analytical tool, which is used to replace conventional distillation methods for the accurate control of refining operations. A problem with the SimDis GC technique has traditionally been the solvent quenching effect of carbon disulfide, on early-eluting analytes (C1-C6). Under review by ASTM is a method that would merge the SimDis data with DHA data to remove this quenching effect. This presentation will describe the methodology of both applications and how they are merged together for the final boiling range distribution report. Paper Presentation

Abstract# 87 - 3:00 PM - 20 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium “High Efficiency PAH Analysis of Seafood from the Gulf of Mexico by UHPLC”

Jason Weisenseel, Wilhad Reuter, William Goodman - PerkinElmer, Inc.

Polynuclear aromatic hydrocarbons (PAHs) are condensed ring aromatic compounds that are important pollutants due to the carcinogenicity exhibited by the 4 and 5-ring PAHs and their widespread occurrence. PAHs are found as trace pollutants in waters, solid wastes, soil, and foods and are typically analyzed using HPLC using a combination of UV and fluorescence detection. Sixteen of these PAHs are routinely monitored via EPA Methods 550.1, 610 and 8310. Three additional PAHs are often included: 1-methylnaphthalene, 2-methylnaphthalene, and benzo(j) fluoranthene, a total of 19 PAHs that may be monitored. With the appropriate selection of column, all 19 PAHs can be separated; with HPLC the analysis time is close to 20 minutes. This paper covers the development of a high efficiency PAH analysis by UHPLC. Gulf Oil Spill Symposium Paper Presentation

Abstract# 88 - 1:00 PM - 30 minutes – Hibiscus - Tuesday

“News on the Ultra low Sulfur determination with WD XRF!”

Alexander Seyfarth, Larry Arias Bruker AXS Inc. Monte Solazzi Chemplex Inc. Florida Nick Morton Oklahoma University
Learn how to be more successful in your ASTM D2622 ULS in petrochemicals procedure: If you never heard about the FOIL effect, distressing samples, sagging as well as poly sulfide oils this is the chance for you to catch up! We will cover the sample preparation as well instrumentation setup to be successful with D 2622 as well as show you newest data which make you forget about the usual MYLAR® foils! Join us for an instructive 45 minutes of highly condensed information on the method and its best use on WDXRF. Paper Presentation

Abstract# 89 - 1:00 PM - 30 minutes – Daffodil - Wednesday

“Rapid Payback on On-site Hydrogen Generation Demonstrated at International Flavors and Fragrances”

Stephen Toth, Research Scientist for International Flavors & Fragrances, and John Speranza, vice president for Proton Energy Systems

International Flavors & Fragrances (IFF), one of the worlds leading creators and manufacturers of flavors and fragrances, recently installed an on-site hydrogen generator at its analytical facility Research Analytical Services in Union Beach, N.J. to supply its 31 gas chromatography systems. After evaluating the conversion from helium to hydrogen for carrier gas and changing its testing process to employ the Fast GC method for all their Gulf Coast activities, IFF experienced a very rapid project payback. Join IFFs Stephen Toth to learn how your organization can install an on-site hydrogen generation system and experience results that impact your bottom line. Paper Presentation

Abstract# 90 - 9:00 AM - 50 minutes – Hibiscus - Tuesday

“XRF PETRO PRIMER - What YOU Need to Know to Use XRF for PETROCHEMICAL Analysis” Al Martin, Thermo Scientific Alexander Seyfarth, Bruker Elemental Inc. Charles Wu, University Of Western Ontario London

This training class will introduce you to XRF spectrometry and its different techniques focusing on analysis of fuels, lubes, polymers and other petrochemicals using minimal sample preparation for all elements from Sodium (Na) to Uranium (U). We will explain the principles, detail sample preparation basics, cover and compare the energy dispersive (ED) and wavelength dispersive (WD) systems as well as explore the potential difficulties associated with this method of analysis using XRF. Attending this session will enable you to compare ED and WD XRF technology and assess which technique you will need for a specific application. Advances in WD and ED XRF as well as evaluation software have made XRF the easiest elemental analysis technique for elements from F to U! If you still use AAS or ICP or even do titrations come to this class to see the XRF difference! This course is non commercial and aimed at providing you with examples on successful applications ranging from ASTM D2622 ultra low sulfur analysis to analysis of Polyolefin and restricted elements in polymers. Training

Course - Introduction

Abstract# 91 - 9:00 AM - 3 hours – Hibiscus - Tuesday

“XRF PETRO PRIMER - What YOU Need to Know to Use XRF for PETROCHEMICAL Analysis” Al Martin, Thermo Scientific Instruments Alexander Seyfarth, Bruker Elemental Inc. Charles Wu, University Of Western Ontario London

This training class will introduce you to XRF spectrometry and its different techniques focusing on analysis of fuels, lubes, polymers and other petrochemicals using minimal sample preparation for all elements from Sodium (Na) to Uranium (U). We will explain the principles, detail sample preparation basics, cover and compare the energy dispersive (ED) and wavelength dispersive (WD) systems as well as explore the potential difficulties associated with this method of analysis using XRF. Attending this session will enable you to compare ED and WD XRF technology and assess which technique you will need for a specific application. Advances in WD and ED XRF as well as evaluation software have made XRF the easiest elemental analysis technique for elements from F to U! If you still use AAS or ICP or even do titrations come to this class to see the XRF difference! This course is non commercial and aimed at providing you with examples on successful applications ranging from ASTM D2622 ultra low sulfur analysis to analysis of Polyolefin and restricted elements in polymers. Training Course

Abstract# 92 - 10:40 AM - 20 minutes - Exhibit Hall - Wednesday

“TXRF for Environmental Applications with the BENCHTOP S2 PICOFOX” Dr. Michael Rider Bruker AXS Inc., The Woodlands, TX Michael Beauchaine Bruker AXS Inc. Madison, WI Dr. Hagen Stosnach, Bruker Nano GmbH, Berlin Germany

Effluent testing for industrial plants with high solids content posed challenges for any ICP or AAS. We will show case studies from effluents and benchmarks using NIST standard reference material to illustrate the performance of the new instrument with the proven TXRF technique. The poster will illustrate sample preparation, calibration and validation for this and similar applications. Poster Presentation

Abstract# 93 - 9:00 AM - 3 hours – Wisteria - Wednesday

“Titrator Training Course - Introductory Session” Tore Fossum - Mettler Toledo, Inc.

Basic training course for users of automatic titrators. We present the theory of titration, theory of electrodes, calibration and testing of electrodes, standardization, troubleshooting and maintenance. Advanced topics will be presented in the afternoon session. Training Course

Abstract# 94 - 1:00 PM - 3 hours – Wisteria - Wednesday

“Titration Training Course - Advanced Session” Tore Fossum - Mettler Toledo, Inc.

Second part of basic training course for users of automatic titrators. The operation and use of the Mettler Toledo Titration Excellence instruments T50, T70 and T90 will be explained. We will discuss setting up and optimizing titration methods including titration control parameters. Result calculations are done according to the standard rules of algebra, and formulas for percent, parts per million and molarity will be explained, as well as how to use blanks and do back titrations. Some common types of analyses will be presented, including petroleum acid numbers and base numbers. If time permits, other applications can be discussed at the request of the participants. Training Course

Abstract# 95 - 10:00 AM - 20 minutes – Hibiscus - Wednesday

“A New Approach to Quality Control of Polyols through Titration” Tore Fossum - Mettler Toledo, Inc.

Polyurethane chemistry has produced marvellous polymers. To ensure the quality of the product, methods for the titrimetric analyses of isocyanate content, hydroxyl content, acidity and water have been developed which significantly improve precision and

accuracy over older methods. Polymer Characterization Workshop

Abstract# 96 - 11:30 AM - 20 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium "On-site Oil and Grease Measurements in Water and Soil" *Sandy Rintoul, Dylan Wilks - Wilks Enterprise, Inc.*

The InfraCal TOG/TPH Analyzers are small (6 inches square), lightweight (less than 5 lbs), rugged (no moving parts) and can be operated from a battery pack or cigarette lighter. This fits the requirements for traveling to clean-up sites in the Gulf to measure total oil and grease (TOG) and total petroleum hydrocarbon (TPH) in water or soil samples. They utilize field proven infrared technology and are currently used by offshore oil platforms, refineries and environmental testing companies worldwide. Total analysis time is under 10 minutes eliminating the wait for lab results and they are ideal for use by non-technical personnel. Gulf Oil Spill Symposium Paper Presentation

Abstract# 97 - 2:30 PM - 30 minutes – Orchid - Tuesday

"Atmospheric Pressure GC for Petrochemical Analysis" *Doug Stevens, Anthony Newton, Jordan Blodgett - Waters Corp.*

Traditional GC/MS ionization techniques have in common the fact that they take place within a vacuum. While not a limitation for EI and FI, which require high vacuum, CI does have some limitations imposed on it when performed in a vacuum region. Instead of optimizing the type and amount of the reagent gas to create the best conditions for chemical ionization it is often necessary to limit the amount of the reagent to avoid damage to the vacuum pumps and to use only those reagents available in ultra high purity gas form. CI at atmospheric pressure is much more flexible. In fact APCI was initially paired with LC/MS due to its efficient ionization in an atmospheric region. This made it a convenient way to match the high gas flow created by vaporized LC solvents with the high vacuum requirements of a mass spectrometer. The adaptation of pairing GC to APCI allows optimization of the CI process with a wider range of reagents and without the limitations imposed by a vacuum source. In addition it provides access to ionization types not possible with LC/MS APCI since reagents can actively be excluded from the ionization region. So with APGC the optimization of the CI conditions is decoupled from the chromatography as well as the limitations of the vacuum system. This presentation will address the optimization of CI conditions in the APGC source and demonstrate the application of this technique to petrochemical analysis on a QToF mass spectrometer. Paper Presentation

Abstract# 98 - 1:30 PM - 60 minutes – Iris - Tuesday

"Effective Techniques to Solve Your Laboratory Nonconformances" *Gretchen Mc Auliffe - EM2 Solutions*

Are you tired of having the same laboratory issues occur over and over? Or, did the auditor just leave you with a list of nonconformances? If so, this is the workshop for you. This presentation will describe basic root cause analysis techniques to help you investigate, determine and eliminate problems once and for all. The presenter will describe the corrective action process, which starts with how to identify and define the problem. In addition, the session will also include a review and example of the most common root cause analysis techniques. The presenter will also explain the difference between correction, corrective action and preventive action. This workshop is designed for individuals tasked with responding to audit nonconformances or for those who have an interest in improving laboratory operations. This is an excellent course for laboratory personnel who work in an organization that seeks or maintains ISO certification or other third-party accreditations. This is not a session for those who are expecting us to solve all your problems in an hour. Workshop Presentation

Abstract# 99 - 3:00 PM - 60 minutes – Iris - Tuesday

"Process Based Auditing in the Laboratory"

Gretchen Mc Auliffe - EM2 Solutions

Audits are a driver of continual improvement. Audits tell an organization, in a snapshot, how effective a system is functioning. Laboratory internal audits encourage the proper implementation of analytical methods and key Quality Assurance support programs. Audit emphasize the activities, such as the facilities, equipment maintenance, record keeping, personnel training, and intercomparison studies, that have the potential to adversely affect data quality and integrity. This presentation will describe the fundamentals of the process based audit approach. In addition, the presenter will describe how to conduct a process based audit within a laboratory. This workshop is designed for individuals with beginner experience in process based auditing or as a refresher for those who have previously been trained in internal auditing. This is an excellent course for laboratory personnel who work in an organization that seeks or maintains ISO certification or other third-party accreditations. Participants will receive an example audits checklist used to use in laboratory process based audits. Workshop Presentation

Abstract# 100 - 11:30 AM - 45 Minutes – Daffodil - Wednesday

"IC/HPLC Users Group Panel Discussion" *Kirk Chassaniol, Jawad Pashmi, Dave Knowles, Chuck Costanza, Lisa Lenehan - Dionex Corp*

Conference attendees are invited to an open discussion concerning HPLC & IC applications and troubleshooting. The discussion will be lead by a panel of Dionex experts. Attendees who wish to discuss specific topics are encourage to email their subject matter in advance to lisa.lenehan@dionex.com. Users Group Meeting

Abstract# 101 - 5 hours: 9:30 - 11:30 & 1:30 - 4:30 – Orchid - Wednesday

"Agilent Technologies Workshop" *James D. McCurry*

The Agilent Technologies Gulf Coast Conference Workshop will focus on new solutions to improve productivity and expand analysis capabilities of laboratories supporting petroleum, refining and chemical industries. Topics will include 1) Analysis Solutions for Greenhouse Gas Solutions, 2) A New PLOT Column for Trace Sulfur Measurements In Hydrocarbons, 3) Reliable Analysis of Light Petroleum Fractions Using Capillary Flow Technology Backflush, 4) Solutions for Oxygenate Analysis in Fuels, 5) Improved ICP-OES Elemental Analysis of Gasoline, 6) Advanced Technologies for Analysis of Hydrocarbon Contamination in the Environment and Foods. Following the technical presentation, there will be a social reception. Workshop Presentation - 5 hours Abstract # 101

Abstract# 102 - 10:00 AM - 30 minutes – Orchid - Wednesday

"Agilent Technologies Workshop: Solutions for Greenhouse Gas Analysis" *Chunxiao Wang - Agilent Technologies Shanghai*

The major greenhouse gases found in the earths atmosphere are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Continuous measurement of greenhouse gases provides the meaningful information needed to track emission trends and help monitor affects on climate change. Beginning January 1, 2010, the U.S. Environmental Protection Agency required large emitters of greenhouse gases to collect gas data under a new reporting system. This paper will present two Agilent 7890A GC systems have been developed to meet the different requirements for simultaneous analyses of greenhouse gases in air samples. Agilent Technologies Workshop Paper Presentation

Abstract# 103 - 10:30 AM - 30 minutes – Orchid - Wednesday

"Agilent Technologies Workshop: Determining Low ppb Levels of Reactive Sulfur Compounds in Hydrocarbon Matrices Using a New Generation PLOT Columns" *Johan Kuipers and Helena Jacobse - Agilent Technologies, The Netherlands*

A GC PLOT column is introduced based on a novel stationary phase, specifically developed for the analysis of H₂S, COS and mercaptanes in light hydrocarbons. The column exhibits near 100% sulfur responses and linearity at < 100 ppb for different sample types. Other characteristics include excellent mechanical stability and selectivity between sulfur species and hydrocarbons. These properties eliminate particle loss, allow backflush operations, and eliminate quenching with sulfur selective detectors. The separation and linearity characteristics of this new PLOT column are illustrated by various applications in the field of gas analysis including sulfur detection in, LPG, ethylene, propylene and air matrices. Agilent Technologies Workshop Paper Presentation

Abstract# 104 - 2:30 AM - 30 minutes – Iris - Wednesday

“Agilent Technologies Workshop: Fast 2-D GC Analysis of Ethanol Based Motor Fuels” *James D. McCurry - Agilent Technologies*

Ethanol fuels made from renewable biomass are finding markets throughout the world as producers scale up production and automobile manufacturers develop ethanol capable vehicles. This paper will then present a multidimensional GC (MDGC) method to improve the productivity and resolution of ethanol fuel analysis. The use of a back flush technique was combined with this MDGC analysis to further reduce run times as well as extend column life. This technique was also expanded to include the analysis of benzene and toluene in ethanol fuels, thus eliminating the need for a second GC dedicated to aromatic analysis. Agilent Technologies Workshop Paper Presentation

Abstract# 105 - 1:30 PM - 30 minutes – Orchid - Wednesday

“Agilent Technologies Workshop: Oxygenates in Fuels - Analysis Solutions From Trace Levels to Ethanol Fuels” *James D. McCurry - Agilent Technologies*

The analysis of individual oxygenates in gasoline is more challenging due to the increased production of biofuels and the removal of some additives, like MtBE, from reformulated gasoline. Depending on the fuel and the analysis requirements, different GC configurations and methods must be designed to measure a many oxygenated compounds over a wide concentration range. This paper will present several GC configurations for analyzing major and trace amounts of oxygenates in bioethanol fuels and gasoline. Emphasis will be placed on improving analysis productivity and reducing costs and complexity. Agilent Technologies Workshop Paper Presentation

Abstract# 106 - 2:00 PM - 30 minutes – Orchid - Wednesday

“Agilent Technologies Workshop: Low Level Elemental Impurity Determination in Gasoline Using ICP-OES with FACT spectral Deconvolution Correction” *Steve Wall, Patrick Simmons, and Doug Shrader - Agilent Technologies*

The determination of trace elements in petroleum products allows refiners, re-sellers, and importers the ability measure product quality and the presence of additives. This analysis has traditionally been difficult due to structured background interferences from carbon emissions masking low level analyte signals. Through the use of a unique spectral deconvolution algorithm known as FACT (Fast Automated Curve-fitting Technique), trace elements can accurately be determined in a variety of petroleum products. Specifically, the analysis of low level arsenic in gasoline will be examined. Additional sample introduction considerations for successful analysis of trace metals in petroleum products will also be reviewed. Agilent Technologies Workshop Paper Presentation

Abstract# 107 - 2:30 PM - 30 minutes – Orchid - Wednesday

“Agilent Technologies Workshop: Advanced Measurement Technologies for Analyzing Environmental Matrices Contaminated with Petroleum Hydrocarbons” *Cynthia Cai, Mike Szelewski, and Joni Stevens - Agilent Technologies*

The Gulf Oil Spill Disaster has quickly shown the need to

measure many forms of contamination in a wide variety of sample types. This paper will discuss an overview of the analysis requirements and present pre-configured solutions to quickly implement established EPA and NOAA methods for environmental and food testing in your laboratory. Techniques to improve analysis productivity and maintain instrument up-time will be shown. This presentation will also include novel approaches to analysis of unknowns using GCxGC and LC/MS. Agilent Technologies Workshop Paper Presentation

Abstract# 108 - 11:20 AM - 30 minutes – Hibiscus - Wednesday

“Effect of Temperature and Flow Rate Changes on Molecular Weight Accuracy and Precision of the EcoSEC GPC System” *Caitlyn Sun - Tosoh Bioscience LLC*

The 7th generation EcoSEC® GPC System from Tosoh Bioscience incorporates advanced engineering that results in superior performance. To enhance baseline stability, the system utilizes two independent pumps and a dual flow RI cell to simultaneously pump solvent plus sample through the sample side of the RI cell and solvent without sample through the reference side of the RI cell. For high flow rate precision, the system includes solvent degassing, temperature controlled solvent lines, and temperature controlled pumps. In order to measure the significance of this design, flow rate and temperature were systematically varied to show the effects on accuracy and precision of molecular weight determination. In addition, effects of temperature and flow rate changes on column efficiency and separation resolution will be discussed. The semi-micro design of the EcoSEC GPC System minimizes extra-column band broadening to take full advantage of the highest efficiency GPC columns available. When combined with semi-micro TSK-GEL GPC columns (4.6mm ID x 15cm), the EcoSEC GPC system delivers short analysis times, excellent reliability and low operating cost without any loss of resolution. Options include UV, light scattering, and viscometry detectors as well as a column switching valve. Polymer Characterization Workshop Paper Presentation

Abstract# 109 - 1:00 PM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium “Fast and Accurate GC/MS Testing for EPA and EU Polycyclic Aromatic Hydrocarbons (PAHs) for Food and Environmental Applications, GC column Choices and Method Optimization” *Johan Kuipers and John Oostdijk - Agilent Technologies, The Netherlands*

The Gulf oil spill has heightened attention to environmental and food contamination by PAHs. The scope of PAH analysis is changing under influence of the WHO and EU on international legislation bodies. For GC/MS analysis, several non regulated PAHs co-elute with regulated EPA and EU PAHs with the possibility to generate biased results. Since co-eluting PAHs often exhibit identical MS fragmentation, the capillary column selectivity must be optimized using dedicated liquid phase chemistry. This provides unambiguous PAH identification and prevents reporting false positives from the EPA and EU PAH list. This presentation on PAHs will discuss the GC column choices which are currently available, the pitfalls of co-eluting isomers and GC method optimization for fast and accurate PAH measurements. Gulf Oil Spill Symposium Paper Presentation

Abstract# 110 - 11:00 AM - 20 minutes - Exhibit Hall - Wednesday

“The Extraction of Glycols From Water Using ENVI-Carb Plus Solid Phase Extraction Cartridges”

L.M. Sidisky, K.K. Stenerson, W.R. Betz, M.J. Keeler, J. Brown, and M.R. McCoy - Sigma-Aldrich/Supelco

The analysis of glycols such as propylene and ethylene glycol from water samples is traditionally done by direct aqueous injection into a gas chromatograph. Aqueous injections are problematic in GC analysis due to issues such as the large expansion volume of water in the inlet, increased carryover, and

elevated detection limits. It would be advantageous to do glycol analysis from an organic solvent, however the highly hydrophilic nature of glycols does not allow for liquid/liquid extraction or solid phase extraction with reverse phase sorbents such as C-18. In this work, we have evaluated a unique carbon adsorbent, ENVI-Carb Plus, and found it to be able to retain glycols from water. Subsequent elution of the glycols from ENVI-Carb Plus with an organic solvent allowed for improved GC analysis over direct aqueous injection. The extraction method developed was found to be reproducible and quantitative, and was not affected by the presence of salt and hydrocarbon contamination. Poster Presentation

Abstract# 111 - 11:30 AM - 20 minutes - Exhibit Hall - Wednesday

Gulf Oil Spill Symposium "Detection and Identification of Dispersants (Corexit 9527 and Corexit 9500) by GC/MS and LC/MS/MS" *Kory Kelly, Sky Countryman, Ngoc Nguyen, Terrell Matthews - Phenomenex, Inc*

To fight the largest oil spill in US history, nearly a million gallons of dispersant have been pumped into the Gulf of Mexico. Dispersants are plasticizers commonly used to prevent clumping and help dissipate oil slicks. Unfortunately, very little is known about their effects on humans, wildlife, or the environment. In this work, we used GC/MS and LC/MS/MS to detect and identify the two most widely used dispersants used to date (Corexit 9527 and Corexit 9500). We also evaluated Nony Phenol, a potential break down product of the dispersants. Gulf Oil Symposium Poster Presentation

Abstract# 112 - 3:30 PM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Detection and Identification of Dispersants (Corexit 9527 and Corexit 9500) by GC/MS and LC/MS/MS" *Kory Kelly, Sky Countryman, Ngoc Nguyen, Terrell Matthews - Phenomenex, Inc*

To fight the largest oil spill in US history, nearly a million gallons of dispersant have been pumped into the Gulf of Mexico. Dispersants are plasticizers commonly used to prevent clumping and help dissipate oil slicks. Unfortunately, very little is known about their effects on humans, wildlife, or the environment. In this work, we used GC/MS and LC/MS/MS to detect and identify the two most widely used dispersants used to date (Corexit 9527 and Corexit 9500). We also evaluated Nony Phenol, a potential break down product of the dispersants. Gulf Oil Spill Symposium Workshop Presentation

Abstract# 113 - 11:40 AM - 20 minutes - Exhibit Hall - Wednesday

"ASTM D 3606 Analysis for Quantifying Benzene and Toluene in Finished Gasoline Made Simple"

Barry L. Burger, Jan Pijpelink - Restek Corp.

Demand for finished gasolines containing ethanol continues to increase, as these fuels reduce greenhouse gas emissions and can be used to help control air pollution. Ethanol is a cost-effective additive for production; however, its presence significantly complicates the analysis of benzene, a regulated carcinogen which is added to increase octane levels. Accurate benzene and toluene analysis is critical because incorrect data can result in inaccurate octane levels and out-of-specification product. Toluene analysis is straightforward, but benzene is extremely difficult to separate from ethanol on the 1,2,3-tris(2-cyanoethoxy) propane (TCEP) column listed in ASTM method D3606. A new D3606 column set developed by Restek separates benzene and ethanol completely and more reliably than TCEP columns, resulting in tighter control and more accurate results for refineries and contract laboratories. Poster Presentation

Abstract# 114 - 1:00 - 20 minutes - Exhibit Hall - Wednesday

Gulf Oil Spill Symposium "Detection of Environmental Contaminants Caused By The Oil Spill In The Gulf Of Mexico By GC/MS And LC/MS/MS" *Kory Kelly, Sky Countryman, Ngoc Nguyen,*

Terrell Matthews, Chris Fernandez, Matthew Trass - Phenomenex, Inc

The recent oil spill in the Gulf of Mexico is undeniably the largest oil leak in US history. The objective of this work was to provide analytical methods for analyzing the most common contaminants that originated from the leak. Quick SPE, GC/MS, or HPLC methods were developed for detecting Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs), and Volatile Organic Compounds (VOCs). PHCs fuel samples were separated into Gasoline Range Organics (GROs) and Diesel Range Organics (DROs). The VOCs testing determined the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX). Quick analysis of diesel fuel and VOCs was also done. Gulf Oil Spill Symposium Poster Presentation

Abstract# 115 - 3:20 PM - 20 minutes - Ivy I & II - Wednesday

"Investigating Air as a Carrier Gas with Ionic Liquid Capillary Columns" *L.M. Sidisky, Y. Ni, G.A. Baney, J.L. Desorcie, K.K. Stenerson - Sigma-Aldrich/Supelco*

Analysts have constantly worked to make their carrier gas streams free of air as a contaminant as air in a carrier gas stream has been recognized as being very detrimental to the performance of polar (polyethylene glycol) and highly polar (cyanopropyl) capillary columns. Recently, we have been investigating a new unique class of stationary phases based on ionic liquids that demonstrate excellent stability when using air as a carrier. In this study we will determine the van Deemter curve for air and compare it with the traditional carrier gases. We will also demonstrate the stability and durability of ionic liquid columns using air as a carrier compared to traditional stationary phases. Paper Presentation

Abstract# 116 - 1:20 PM - 20 minutes - Exhibit Hall - Wednesday

"New Zebtron ZB-1XT SimDist GC Column Provides 70% Higher Efficiencies, For Improved Results of Simulated Distillation Analysis" *Kory Kelly, Sky Countryman, Ngoc Nguyen, Chris Fernandez, Matthew Trass - Phenomenex, Inc*

Simulated Distillation is common GC technique used to characterize petroleum fractions and products. Up until now, the limited choices in GC columns available may provide irreproducible results not only from column-to-column but from injection to injection. This work presents an innovative new metal GC column from Phenomenex that can greatly improve the data accuracy of simulated distillation studies. The Zebtron ZB-1XT SimDist column utilizes the new Glass Infusion Technology that greatly increases the reproducibility of the analysis. The new product also provides up to 70 % higher efficiencies for sharper peaks and improved signal to noise for late eluting hydrocarbons. Poster Presentation

Abstract# 117 - 3:00 PM - 60 minutes - Wisteria - Tuesday

"Overview of Ionic Liquids with Petrochemical Samples" *Sidisky LM, Stenerson KK, Ni Y, Baney GA, Desorcie JL, D.W. Armstrong - Sigma-Aldrich/Supelco*

Ionic liquids are a class of non-molecular ionic solvents with low melting points. These liquids are unique combinations of cations and anions and can provide a variety of different selectivities when used in various applications. We have recently been investigating the use of ionic liquids with a number of chromatographic and spectrometric techniques. In this study we will discuss the use of ionic liquids as stationary phases for GC and also their use as Maldi matrices for analyzing biodegradable polymers and for determining anions in a positive mode with mass spectrometric analyses. A number of ionic liquid phases have been evaluated and characterized for selectivity and determined to be polar or highly polar in selectivity compared to traditional siloxane based phases. These phases will offer an orthogonal separation mechanism compared to the nonpolar phases that are widely used to analyze environmental samples. In this study we will demonstrate the classical selectivity

determination of the phases along with analyzing a series of aliphatic and aromatic samples. A series of sulfur compounds will be analyzed to further investigate the selectivity and inertness of the phases. Finally we will discuss the stability of the ionic liquid phases being used with air as a carrier gas will also be investigated. Seminar Presentation

Abstract# 118 - 10:30 AM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Wasson-ECE Air Concentration System for EPA Method TO-15" *Brenda Smith, Marcie Glass - Wasson-ECE Instrumentation*

Oil has many volatile components (VOCs) which can readily evaporate into the atmosphere, posing risks to health and the environment. The ability to measure trace levels of these VOCs in air is necessary to monitor the effects of the oil spill in the Gulf Coast. Wasson-ECE Instrumentation provides an air concentration system to perform analysis of VOCs in ambient air per EPA Method TO-15. The system utilizes a sorbent trap at ambient temperatures to concentrate analytes and thermally desorb them to a GC/MS. The system can test samples from Summa canisters, Tedlar bags, as well as directly from ambient air. Gulf Oil Spill Symposium Paper Presentation

Abstract# 119 - 4:00 PM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "CLEANMAG: The Magnetic Sorbent Approach Against Waterborne Oil Spills"

G. Nicolaidis and G. Zombanakis - CLEANMAG S.A. and Nibioservices Inc.

It is well known that as far there is a persistent dependency of the world energy on oil always the planet would have to suffer from the side effects of this dependency such as the waterborne oil spills (not to mention the recent one in the Gulf of Mexico). Although the traditional technologies have not proved to be fully functional and efficient in the cleanup operation, little attention has been paid to new alternative techniques which have been proved to do a much better job in the field, while at the same time are fully environmentally friendly. In this paper the new magnetic technology CLEANMAG for the cleanup of waterborne oil spills is presented and comparison with the traditional methods is described. Gulf Oil Spill Symposium Paper Presentation

Abstract# 120 - 1:00 PM - 20 minutes - Exhibit Hall - Wednesday

"Development of a Logistically-Enabled Sampling System (LESS™) for the Collection of High Geographic Density or High Temporal Resolution Samples Using Multi-Bed Sorbent Tubes" *Kyle Hunt, Renee Williams, Matt Bartlett, Brian Schimmoller - Signature Science, LLC*

This poster will cover the development of a new pumped/active air sampling system, present the latest verification data, and illustrate the utility of the system in several case studies. The highly-portable system is quickly and efficiently deployed to support single or networked monitoring locations; sampling activity is controlled from remote locations. The 28 sorbent tube manifold can collect hourly air samples, including duplicates and blanks, to characterize concentrations of a wide spectrum of chemical species. Sorbent-bed material selection is tailored to the project's parameter list. Collection and replenishment of sampling media is via the sealed 'plug-and-play' manifold, which can be shipped directly to a laboratory for sample analysis. The system can be integrated with existing sensors and/or monitoring systems or customized to operate with a project specific set of sensors that control frequency or duration of sampling. For example, meteorological sensors or a PID for VOCs can either trigger sampling or provide continuous data to assist in the selection of samples for analysis. Poster Presentation

Abstract# 121 - 1:40 PM - 20 minutes - Exhibit Hall - Wednesday

"Fast Determination of Impurities in Propane-Propylene Streams Using a Pulsed Flame Photometric Detector (PFPD) and a New Capillary PLOT Column" *Laura Chambers, Gary Engelhart, Hank Hahn - OI Analytical*

Determination of sulfur impurities in propane-propylene feedstock is important because they corrode equipment, poison catalysts, and affect polymer yield. Analysis of sulfur compounds is traditionally done by gas chromatography with sulfur-selective detection, however with a propane-propylene feed most available GC columns will not separate the impurities from the matrix, will irreversibly absorb H₂S, or have poor peak shape. This poster will describe a turn-key solution for fast analysis of sulfur in propane-propylene feedstock using a Pulsed Flame Photometric Detector (PFPD) and a new capillary column designed to give baseline separation of the sulfur impurities from the propane-propylene matrix, provide good peak shape, and exhibit excellent response for H₂S. Poster Presentation

Abstract# 122 - 1:00 PM - 30 minutes - Iris - Tuesday

"Scientific Staffing- How Using A Specialized Staffing Agency Impacts Your Bottom-line"

Felicia Solomon - EM2 Solutions, Inc.

Staffing agencies have long been used to help organizations find qualified candidates to fill positions. However traditional staffing agencies may not have the technical knowledge to effectively help companies find chemists, lab technicians, engineers or operators they seek. This often results in frustration for both for the company and the agency. Over the last 20 years, agencies have begun to specialize in industry specific staffing. This presentation will include an overview of the staffing process, costs associated with recruiting and employment, and how using an agency can impact your bottom line. An EM2 Solutions recruiter will be on hand to discuss EM2s recruitment practices, the qualifications of personnel within our agency, and how this will streamline your hiring process. Workshop Presentation

Abstract# 123 - 11:30 AM - 20 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "The Extraction of Glycols From Water Using ENVI-Carb Plus Solid Phase Extraction Cartridges" *L.M. Sidisky, K. K. Stenerson, M. McCoy, J. Brown, W.R. Betz, M. J. Keeler - Sigma-Aldrich / Supelco*

The analysis of glycols such as propylene and ethylene glycol from water samples is traditionally done by direct aqueous injection into a gas chromatograph. Aqueous injections are problematic in GC analysis due to issues such as the large expansion volume of water in the inlet, increased carryover, and elevated detection limits. It would be advantageous to do glycol analysis from an organic solvent, however the highly hydrophilic nature of glycols does not allow for liquid/liquid extraction or solid phase extraction with reverse phase sorbents such as C-18. In this work, we have evaluated a unique carbon adsorbent, ENVI-Carb Plus, and found it to be able to retain glycols from water. Subsequent elution of the glycols from ENVI-Carb Plus with an organic solvent allowed for improved GC analysis over direct aqueous injection. The extraction method developed was found to be reproducible and quantitative, and was not affected by the presence of salt and hydrocarbon contamination. Gulf Oil Spill Symposium Paper Presentation

Abstract# 124 - 1:30 PM - 20 minutes - Exhibit Hall - Wednesday

"NeSSI is an acronym for New Sampling/Sensor Initiative, Not a Monster" *Gordon McFarlane, Yves Gamache - Analytical Flow Products*

The NeSSI programme was begun to simplify the tasks, and reduce the costs, associated with engineering, installing and maintaining chemical process analytical systems. The specific objectives of NeSSI are to increase process analytical system

reliability through the use of increased automation, shrink the physical size by means of miniaturization. Two years ago we introduced a totally re-engineered Diaphragm Valve with patented features never before seen. This year we are introducing this robust valve on the NeSSI platform. The innovations we brought to the lab, are now available to the process industry – virtually “plug & play” - with all the benefits. Poster Presentation

Abstract# 125 - 1:20 PM - 20 minutes – Daffodil - Tuesday

“Rapid Analysis of Jet Fuel Using a Portable Near-Infrared Analyzer” *George Zombanakis, Christopher Larkin - Bruker Optics*
Validating the quality of jet fuel at large commercial airports throughout the world is a time-consuming and expensive process as well as essential for ensuring flight safety. A portable near-infrared analyzer was used to develop a series of partial least squares (PLS) models for the rapid prediction of some critical jet fuel specification properties in accordance with (but not limited to) ASTM D1655. The results indicate that the portable NIR analyzer is an ideal candidate tool to be used for the rapid monitoring of jet fuel quality properties throughout the jet fuel distribution system from refinery to airport. Paper Presentation

Abstract# 126 - 1:00 PM - 30 minutes - Vine I & II - Wednesday

“Rotary Valves, Then and Now – An improved Design – A New Industry Standard” *Gordon McFarlane, Yves Gamache - Analytical Flow Products*

In the early days the chromatographer was faced with the problem of injecting reproducible sample sizes. A calibrated syringe was initially used, but this depended on the ability of the individual operator. This paper is a result of many years of experience, frustration and feedback from seasoned users. Here we will highlight the difference between the new patented valve technology and existing products, clarifying details that are often misunderstood, misinterpreted or overlooked. Operators will benefit by understanding the innovations we have developed and can implement them immediately. Remember, if your valve does not work – neither do you! Paper Presentation

Abstract# 127 - 10:00 AM - 20 minutes - Exhibit Hall - Wednesday

“Streamlined Method for Quantitation of Bisphenol-A in Saliva using Liquid Chromatography – Tandem Mass Spectrometry” *Aaron A. Morgan; Samuel H. Yang; Benjamin J. Figard; Kevin A. Schug - University of Texas at Arlington*

Common plastic additives such as bisphenol-A (BPA) have been shown to be endocrine disruptors. These compounds are frequently found in consumer products. Exposure via food or other products is a source of public concern. A method was developed to measure the levels of BPA in whole saliva by high performance liquid chromatography mass spectrometry (HPLC-MS). BPA-containing saliva was prepared through a novel bulk derivatization procedure. Detection limits as low as 2.9 pg were achieved utilizing internal standards. A saliva sample was taken after eating canned food and analyzed for the presence of BPA using the established method. Poster Presentation

Abstract# 128 - 11:20 AM - 30 minutes – Iris - Tuesday

“The Direct Analysis of Fatty Acids Found in Various Biomass Matrices Using Reactive Pyrolysis-GC/MS” *R.R. Freeman, Frontier Laboratories US, Antioch, CA A. Hosaka, T. Yuzawa and I. Watanabe, Frontier Laboratories, Koriyama, Japan*

Precise fatty acid profiling is an essential step in the characterization of natural products including many food stuffs, a variety of biodiesel processes and some clinical diagnostic tests. Because gas chromatography is almost universally used to separate and quantitate fatty acids, it is necessary to isolate and derivatize the acids prior to analysis. This improves the thermal stability of the acids and increases their vapor pressures. The most prevalent method for converting the acids to methyl esters utilizes a methanolic solution of BF₃. However, BF₃ is toxic, noted for its

instability and not universally available. This work describes a simple, one-step method for profiling fatty acids in a complex matrix. The method utilizes reactive pyrolysis (RxPy)-GC, which is, actually, thermally assisted hydrolysis and methylation. This work will show the FAME profiles of several sample types: oats, switch grass and algae. The impact of using various organic alkalis on the degree of isomerization will be presented. C6:0 and C22:6 will be used to compare the BF₃ and PxPy methods. Paper Presentation

Abstract# 129 - 11:00 AM - 30 minutes – Wisteria - Tuesday

“The Direct Analysis of Residual Bisphenol A, Phthalates and Brominated Fire Retardants in Consumer Products Using Thermal Desorption-GC/MS” *R.R. Freeman, Frontier Laboratories US, Antioch, CA A. Hosaka, T. Yuzawa and K. Odagiri, Frontier Laboratories, Koriyama, Japan*

There are an ever-increasing number of compounds that must be monitored, because they, either, have an adverse effect on human health or are of environmental concern. Analytical protocols used for the determination of these compounds invariably utilize antiquated sample preparation regimes based on liquid extraction, followed by a concentration step. Such methods, in and of themselves, create additional stress on the environment and increase costs. In general, the less time spent on sample preparation, the better the data quality. The search for so-called ‘green’ technologies has focused on solid phase extraction and thermal extraction. This work will discuss the factors influencing the efficiency of thermal extraction. Thermal extraction methods for three groups of compounds will underscore the near-universal appeal of the method. Phthalates and brominated fire retardants are determined directly – the sample is analyzed “as is”. A simple 2-step analytical protocol to accurately quantitate residual Bisphenol A in polycarbonate will be presented. Precision and accuracy for each group of compounds will be discussed. Paper Presentation

Abstract# 130 - 10:20 AM - 20 minutes – Exhibit Hall - Wednesday

“Determination of Metals in Paints, Substrates and On Various Work Surfaces - A New Generation of Certified Calibration Materials” *John B. Sardisco, PhD., Keith A. Perrin, John S. Crnko - Analytical Services, Inc.*

Laboratory-based and portable hand-held Energy Dispersive X-Ray Fluorescence (EDXRF) analyzers are extensively used in applications ranging from lead content screening and certification testing to in-field screening of multiple sample types and work surfaces. Drivers such as the mandated steep reductions in the lead (Pb) content of child-accessible products and need to comply with various personnel exposure levels (PELs) have created an immediate need for certified calibration materials (standards) and performance check standards specifically intended for use with the described EDXRF instrumentation. Highlighted is research and data that led to the development of a new generation of EDXRF compatible calibration standards with lead (Pb) and mercury (Hg) contents well below 0.68 ug/cm² (100 mg/kg). Key quality assurance procedures and protocols employed during various steps of the manufacturing process are described, including various production quality control data using inductively coupled plasma-atomic emission spectrometry (ICP-AES) and X-Ray Fluorescence measurement techniques. An overview of consensus group standard testing organization activities (such as ASTM) is also presented. Poster Presentation

Abstract# 131 - 2:30 PM - 30 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium “Analysis of Gasoline Range Organics (GRO) in a Variety of Matrices Using Multiple Sample Preparations Techniques and Detection Schemes” *Tammy Rellar, Roger Bardsley, Nathan Valentine, Tayler Trent, Tom Hartlein - Teledyne Tekmar*

The recent oil spill in the Gulf has renewed interest in the rapid analysis of crude oil byproducts in aqueous and solid samples.

This paper investigates the analysis of Gasoline Range Organic (GRO) compounds in a variety of matrices using multiple sample preparation techniques including both Purge and Trap (P&T) and Headspace analysis in conjunction with various GC detection schemes. Gulf Oil Spill Symposium Paper Presentation

Abstract# 132 - 10:30 AM - 30 minutes – Wisteria - Tuesday

"Analysis of Semi-Volatile Organic Compounds (EPA Method 8270D) In Environmental Water Samples Utilizing a Solid Phase Extraction Disk and Carbon Cartridge" *Michael Ebitson, David Gallagher - Horizon Technology*

The objective for this research was to provide a high throughput extraction while improving the quality and consistency of results with half the solvent usage than in a conventional 8270D liquid liquid extraction (LLE) or continuous liquid liquid extraction (CLLE). Method 8270D has a very extensive list of semi volatile organic compounds that range in volatility. The SPE-DEX-4790 solid phase extraction (SPE) instrument would be paired along with a hydrophilic-lipophilic balanced (HLB) SPE disk necessary to retain the wide range of compounds in this method. The addition of a carbon cartridge was needed in order to retain the more volatile compounds. Paper Presentation

Abstract# 133 - 1:30 PM - 45 minutes – Hibiscus - Wednesday

"Copolymer Characterization: Modern Methods Using Dual Detection and GPC-Viscometry via PSS WinGPC Unity Software and the Tosoh EcoSEC GPC System" *Michael Gray - Polymer Standards Service - USA Inc.*

Modern copolymer analysis methods using dual detection instruments and GPC-viscometry methods will be discussed in detail. Proper calibration methods and the use of PSS WinGPC® Unity Software and the Tosoh EcoSEC® GPC System will also be discussed. Polymer Characterization Workshop Presentation

Abstract# 134 - 10:00 AM - 30 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium "The Detection of Oil and Grease in Seawater by EPA Method 1664A"

Michael Ebitson, David Gallagher - Horizon Technology

Often times it is necessary to test seawater for Oil and Grease analytes using the Environmental Protection Agency (EPA) Method 1664A. Whether it is due to a controlled release of effluent water from a waste water treatment plant or a large oil spill, there is a need for a fast and reliable extraction procedure. A series of tests were specifically designed to demonstrate the effectiveness of solid phase extraction (SPE) disks for the automated extraction of n-hexane extractable material (HEM) when performed in the presence of seawater. Gulf Oil Spill Symposium Paper Presentation

Abstract# 135 - 1:00 PM - 30 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium "Using Automated Solid Phase Extraction to Aid in the Detection of Poly-Aromatic Hydrocarbons in Seawater" *Michael Ebitson, David Gallagher - Horizon Technology*

One of the most frequently tested for groups of compounds within petroleum and petroleum distillates are poly-aromatic hydrocarbons (PAHs). These compounds have been found to be carcinogenic, mutagenic, teratogenic, and can bioaccumulate within the environment. PAHs are also strongly lipophilic and occur naturally in crude oil and coal deposits. This being said, recent events in the Gulf of Mexico involving the explosion and sinking of the Deepwater Horizon Rig have resulted in the largest oil spill in the history of the United States and have initiated a massive cleanup. A series of tests were specifically designed to demonstrate the effectiveness of solid phase extraction (SPE) disks for the automated extraction of PAHs when performed in the presence of seawater. The samples were extracted using an automated SPE system with HLB SPE disks and concentrated to a final volume of 1 mL for final analysis by GC. Gulf Oil Spill Symposium Paper Presentation

Abstract# 136 - 2:30 PM - 30 minutes – Iris - Tuesday

"Electronic Document Management Systems (EDMS) – Managing the Decision, Implementation, and Integration Process" *Jeanne Mensingh - EM2 Solutions, Inc.*

Companies that maintain a quality management system (ISO 9001, ISO 17025, NELAC, etc.) have to meet document control and record retention throughout the organization. These quality requirements can be labor and time intensive. Common issues include: use of out-of-date procedures (do not reflect current work processes), procedure reviews are past due, lengthy review of procedures, use of uncontrolled documents, and management of controlled copies. The appropriate electronic document management system (EDMS) solution will support the company's efforts to meet the quality requirements and improve accessibility to current documents. The decision to purchase an EDMS should be at least a four (4) step process: building requirements; request for proposals; product demonstrations; and choosing the EDMS. The requirements step is the most important part of the decision process and will determine the success of the implementation. There are many EDMS solutions available in the market today. This presentation will provide the attendee a list of important items to consider when making this investment. Specific Topics: Developing Requirements, Choosing the solution, Implementation, and Integration with existing systems. Seminar Presentation

Abstract# 137 - 9:00 AM - 30 minutes – Daffodil - Wednesday

"eWorkflows: Streamlining Workflows in Chromatography Laboratories" *Jawad Pashmi - Dionex*

Fundamentally, all chromatography workflows are similar: samples are injected, chromatographic separations are performed, signals are captured, and results are generated. Where workflows differ is in the details—such as the instrument conditions, injection sequence requirements, and the techniques by which results are calculated—and these differences create complexity for operators, reducing their efficiency and creating high risk of errors. The Chromeleon® 7 software solves these problems using eWorkflows™. An eWorkflow is a set of rules that captures all of the unique aspects of a chromatography workflow, and guides the operator through a minimal number of choices needed to run that workflow. Using an eWorkflow, the operator simply selects an instrument, specifies the number of samples and the starting vial position in the autosampler, and begins the analysis. The software then runs the chromatography, processes the data, and produces final results. Join Dionex as we introduce eWorkflows in a live demo of Chromeleon 7. Seminar Presentation

Abstract# 138 - 2:15 PM - 60 minutes – Hibiscus - Wednesday

"High Precision SEC Analysis of Polymers" *Judit E. Puskas - The University of Akron*

Polymer Characterization Workshop Presentation

Abstract# 139 - 1:30 PM - 30 minutes – Orchid - Tuesday

"Quantitative Analysis of Environmental Air Contaminants using TSQ Series Mass Spectrometers in Mobile Laboratories" *Calin G. Znamirovski - Thermo Fisher Scientific*

A rapid, on-site, real-time analytical method for the quantitative analysis of air contaminants was developed using APCI-MS/MS on a Thermo Scientific TSQ series mass spectrometer, installed in a mobile laboratory. The application is based on direct air sampling, without sample pre-concentration or use of separation techniques. Availability of such method is very important for both environmental monitoring in areas of long-term or steady exposure, and also in accidental or emergency instances. The achieved LOD values, reported for a series of common ambient air pollutants, are generally lower than the current regulatory limits. The technique is well suited to establish and validate methods for air quality control programs, emission inventory and reporting, compliance and enforcement. Paper Presentation

Abstract# 140 - 1:40 PM - 20 minutes - Exhibit Hall - Wednesday

"Use of GC×GC/TOF-MS in the Analysis of Petroleum Hydrocarbons: Advantages of Library-Searchable ToF Mass Spectra Combined with High Chromatographic Resolution" *Kurt Thaxton(1), Nicola Watson(2), Nick Bukowski(1) - (1) ALMSCO International (2) Markes International*

The analysis of petroleum hydrocarbons by gas chromatography-mass spectrometry (GC-MS) has been considered routine for many years. However, many of the thousands of hydrocarbons in petroleum are still unresolved by GC-MS. GC×GC-MS using a time of flight (TOF) mass spectrometer can improve this resolution such that thousands more hydrocarbons can be separated but identification of many of these separated compounds requires acquisition of mass spectra with clear molecular and fragment ions over a wide carbon number range (e.g C10-40 or higher). In the present study we used a Zoex GC×GC modulator coupled to an ALMSCO BenchTOF-dx time-of-flight MS to optimise chromatographic conditions for the separation of a large range of hydrocarbons in petroleum including hopane biomarkers with molecular weights up to 482. The mass range of the mass spectrometer and design of the GC×GC-ToF-MS instrument may allow this range to be extended further, with the promise of opening up new analytical windows in petroleum chemistry. Poster Presentation

Abstract# 141 - 10:30 AM - 60 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium "Oil/Grease In (Sea) Water – Portable & CFC-Free A New Mid-IR Laser Based Analyzer for Total Petroleum Hydrocarbons in Water" *Wolfgang Ritter, Bernhard Lendl, Michael Strassl - QuantaRed Technologies GmbH*

This presentation introduces the ERACHECK, the world-wide first field-proven analyzer for on-site measurement of total oil and grease (TOG) and total petroleum hydrocarbon (TPH) levels in water and soil samples employing mid-IR laser technology. The operating procedure of the Eracheck involves solvent extraction with cyclohexane (20:1) and subsequent measurement of the extracted hydrocarbons in this environmentally friendly solvent by IR transmission spectroscopy. This method is as simple, fast and precise as former IR methods for TPH that were based on extraction with CFCs. It comes as a fully automated, portable instrument which can also be easily operated by non-experts directly in the field. The linear range of the ERACHECK extends from 0.5 – 2000 ppm / mg/L of TPH in water, waste water and sea water with typical precision of less than 4% across the whole calibration range. Gulf Oil Spill Symposium Workshop Presentation

Abstract# 142 – 1:30 PM - 30 minutes – Bluebonnet - Wednesday

Gulf Oil Spill Symposium "Practical Considerations in the Analysis of Gasoline and Diesel Range Organic Components in Sand and Sea Water by Gas Chromatography" *Leeman Bennington, Heidi Grecsek, and Andrew Tipler - PerkinElmer*

Analysis of total petroleum hydrocarbons by methods EPA SW-846 8015 or TCEQ Method 1005 is commonplace in many environmental laboratories. The key to this analysis is both speed and robustness, allowing the highest throughput with lowest cost. This presentation will discuss method optimization for gasoline (GRO), diesel (DRO), and fuel range organics when measuring gulf oil spill sand and sea water samples by improving chromatography for the lighter boilers and quickly eluting the "heavies" using an improved oven design and preventing unwanted higher boiling contaminants from being collected utilizing Micro-Channel Flow Technology to backflush, reducing GC runtime and maintenance. Gulf Oil Spill Symposium Workshop Presentation

Abstract# 143 - 3:10 PM - 20 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Studies on the Potential Environmental Impacts of Crude Oil and Dispersant Mixtures" *Todd Anderson - Texas Tech University*

The Deepwater Horizon accident in the Gulf of Mexico resulted in

a sustained release of crude oil into the marine ecosystem. Weathered oil was reported to have washed onto shorelines and marshes in southeast Louisiana. One strategy to minimize effects of tarballs, slicks, and oil sheen, and subsequent risk to nearshore ecosystem resources was to use oil dispersants at offshore surface and deepwater locations. Recently, data have been generated reporting how dispersants may alter the acute toxicity of crude oil (Louisiana sweet crude) to marine organisms. However, it remains unknown how dispersants may influence bioaccumulation of petroleum hydrocarbons in organisms. We have conducted a variety of studies to fill in the data gaps on the potential impacts of crude oil and dispersant mixtures on both ecological important organisms as well as organisms that serve as a food source for humans. Gulf Oil Spill Symposium Paper Presentation

Abstract# 144 - 1:30 PM - 20 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Rapid Techniques for the Analysis of PAHs in Mussel Tissue (*Mytilus edulis*): QuEChERS Extraction and Direct Analysis by GC/MS/MS" *Ed George - Bruker Chemical Analysis*

In this work, PAH analysis is carried out on Mussel Tissue (*Mytilus edulis*) using gas chromatography with tandem mass spectrometry (GC/MS/MS). GC/MS/MS provides excellent elimination of matrix interference and confidence in data, especially when crude extracts or direct analysis is employed. Two sample preparation techniques will be compared: a) Rapid, direct screening of mussel tissue with Chromatoprobe™ followed by MS/MS and b) A modified QuEChERS microextraction followed by large volume injection (LVI) into a programmed temperature vaporizing (PTV) injector with GC/MS/MS detection. The use of a Gerstel Twister™ back extraction (TBE) in the QuEChERS procedure will also be evaluated. Gulf Oil Spill Symposium Paper Presentation

Abstract# 145 - 9:30 AM - 30 minutes – Daffodil - Wednesday

"UHPLC Focused+: Dionex Now Offers UHPLC Performance at Standard HPLC Costs" *Jawad Pashmi - Dionex*
Dionex has added UHPLC compatibility to all of its standard and basic automated HPLC systems, and extended the UHPLC performance of our UltiMate® 3000 RSLC systems – giving you more opportunities to get the answers you are looking for, today and tomorrow. Analytical challenges are diverse and challenging with wide ranging concentrations of contaminant and matrix properties. UHPLC+ provides a wider range of solutions for these challenges based on x2 Dual LC technology, intelligent instrument control, and integrated on-line SPE-LC solutions. These can all be enhanced with powerful detection techniques such as UV, fluorescence, electrochemistry, mass spectrometry, and charged aerosol using Dionex Corona®. No matter which organic pollutants are of concern, the UHPLC + focused UltiMate® 3000 platform will give the solutions. A good example of the performance of the Ultimate 3000 Standard system is the analysis of Polyaromatic Hydrocarbons (PAHs). Detection is performed with a fast-wavelength switching fluorescence detector, and 17 different PAHs are separated in less than 6 minutes. Join Dionex as we discuss these new application possibilities as well as introduce the new Corona charged aerosol detector. Seminar Presentation

Abstract# 147 - 11:00 AM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Field Screening by GC/MS and Standoff FTIR of Multiple Sample Types During The Gulf Oil Spill" *Bob Kibler, Franziska Lange, Cindy Carey - Bruker Detection Corporation*

During the last days of the active spill through "Top Kill", samples were collected along the LA coast, grasslands, and marshes of water, soils, air, grasses, and marine life to identify contaminants from the spill. Screening of these samples by GC/MS provided rapid id of individual contaminants and semi-quantitative information useful in determining extent and quality of exposure. Air sampling in real time utilizing Passive standoff FTIR was also accomplished. After the "75% of the oil is gone" declaration, significant levels of toxic materials were identified with increasing

accumulation in bottom soil samples at depths as small as 12 inches. Gulf Oil Spill Symposium Paper Presentation

Abstract# 148 - 10:00 AM - 30 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Sampling and Analytical Parameters for the Monitoring of Petroleum Air Toxics Using Automated Thermal Desorption/Gas Chromatography/Mass Spectrometry (ATD/GC/MS)" *Lee Marotta, Miles Snow, and Heidi Grecsek*
Methods are needed for the investigation of toxic compounds in air as concerns continue for the impact to human health. This presentation will focus on compounds from the Gulf Coast oil spill which have the potential to contaminate air. This sample will contain a broad boiling point range of organic analytes. The goal is to be able to take one sample providing results for all these compounds with optimum accuracy and precision. This will save time and reduce costs. A new sampling tube has been developed allowing for excellent retention and recoveries from C3 to C26 as well as target compounds specified in method TO-15. This recovery was performed in sites with high diesel and moisture content. Gulf Oil Spill Symposium Paper Presentation

Abstract# 149 - 10:30 AM - 30 minutes - Daffodil - Wednesday

"Automatically Remove Matrix Interferences for Better Performance in Many IC Applications"
Kirk Chassaniol - Dionex
RFIC-ESP™ systems enable a range of automated sample preparation techniques which utilize proprietary electrolytic devices to provide reduced cost and higher value analyses. RFIC-ESP devices and techniques can be used for removing cations from an anion sample before analysis by using a Dionex CR-TC device, or neutralizing a strongly acidic or basic solution with an AutoNeutralization™ device. A new Electrolytic Water Purifier is available which provides water of extremely high purity (backgrounds below sub ng/L levels are possible) for use in trace-level analytical work where use of a concentrator column is necessary. The InGuard™ line of sample pretreatment cartridges is designed to remove matrix interferences such as cations (including transition metals), anions, or hydrophobic substances that are encountered in many ion chromatography (IC) applications. Automated in-line sample pretreatment using InGuard in-line sample pretreatment cartridges:
• Eliminates manual sample pretreatment steps • Facilitates better separations • Increases lifetimes of analytical columns • Solves major matrix problems • Achieves reproducible ppm-level determinations in concentrated matrices Paper Presentation

Abstract# 150 - 10:00 AM - 30 minutes - Daffodil - Wednesday

"Capillary Ion Chromatography" *Kirk Chassaniol - Dionex*
The advent of Capillary Ion Chromatography (CapIC) brings a new and exciting dimension to the field of ion chromatography. With the ability to work with very small samples (injection volume ~ 400 nL), coupled with very high mass sensitivity (extremely low detection limits) and very low eluent consumption and waste generation makes CapIC very attractive to many chromatographers. When combined with Reagent-Free Ion Chromatography (RFIC) technology, a CapIC system can operate an entire year (24/7) on just 5.25 L of DI water. That means that the IC system can always be running and ready for samples at any time. The advantages of CapIC and the advances in hardware and column technology will be discussed. Examples of speed and sensitivity of CapIC will be shown for various analytes and matrices. Paper Presentation

Abstract# 151 - 10:40 AM - 20 minutes - Exhibit Hall - Wednesday

"Introduction of a New Fast Scanning, Highly Sensitive Single Quadrupole GCMS: A Platform for Modern Chromatography Techniques" *C. Mark Taylor, Richard R. Whitney, S. Michael McCown - Shimadzu Scientific Instruments*
The modern gas chromatography techniques of Fast-GC and comprehensive GC X GC offer the analyst a variety of desirable advantages over conventional gas chromatography. Fast-GC utilizes extremely narrow bore capillary columns which allow the

analyst to drastically shorten analysis times while maintaining resolution. Comprehensive GC x GC offers the user a much greater ability to resolve complex mixtures into individual components. These techniques are powerful but at the same time very demanding in terms of instrument performance. The very narrow peak widths (100 to 600 milliseconds) generated by these techniques require fast data acquisition rates for full characterization. Publications agree that at least 10 data points across a chromatographic peak are necessary for reliable quantification. Due to the relatively slow scan speed limitations of current quadrupole mass spectrometers, the modern techniques mentioned above have been feasible only with GC detectors or by TOFMS. A quadrupole GCMS system, capable of scanning 20,000amu/sec and 100Hz has been developed that meets the data acquisition requirements of the comprehensive GCxGCMS and Fast-GC techniques. In this study, complex natural product extracts will be analyzed that demonstrate the utility of this new GCMS. Poster Presentation

Abstract# 152 - 11:00 AM - 30 minutes - Daffodil - Wednesday

"An Automated Multi-channel SPE for Oil and Grease Analysis"
David E. Knowles, Bruce E. Richter, Richard E. Carlson, Brian C. Dorich, Eric S. Francis, Brett J. Murphy - Dionex
The analysis of Oil and Grease (EPA Method 1664A) is one of the most common SPE methods used for aqueous samples. The recent oil spill is increasing the sample load of labs who are doing this method. This presentation will show how to automate this method, reduce solvent consumption, increase throughput without compromising the data integrity. Paper Presentation

Abstract# 153 - 2:00 PM - 3 hours - Daffodil - Wednesday

"Baytek International's User Group Meeting at the Gulf Coast Conference" *Jonathan Richter - Baytek International*
Baytek provides LIMS, lab automation software/hardware solutions for the refining, chemical and petrochemical industries in the Houston/Galveston area and around the world. Our customers represent major industrial companies, and these attendees work in or in conjunction with large QA/QC analytical labs. Topics for interactive discussion will include innovative software and hardware solutions. This year we will introduce new automated solutions for interfacing instruments in analytical labs. User Group Meeting

Abstract# 154 - 11:00 AM - 30 minutes - Iris - Wednesday

"A New Concept Of GCxGC/TOF-MS To Address Biofuel Analysis"
Alessandro Casilli - DANI Instruments SA
It is widely agreed that Comprehensive Two-dimensional GC (GCxGC) is the most suitable technique to address the complexity of biofuels. Apart from the increased resolving power, GCxGC also provides a 2D chromatogram of chemically-similar compound patterns. In addition, when hyphenated to a Time of Flight Mass Spectrometer (TOF-MS), a third analytical dimension is added to the system. Fuel composition may vary according to the biomass from which it was derived; therefore the present work is focused on the use of GCxGC/TOF-MS for biofuel analysis to characterize samples according to their composition (aromatic isomers, FAMES etc.). Multidimensional Separations Symposium Paper Presentation

Abstract# 155 - 4:00 PM - 20 minutes - Hibiscus - Tuesday

"Analysis of Catalysts and Zeolites by WDXRF Using a Wide-Ranging-Oxide Application" *Gregory L. Wortman, David G. Coler, and Kimberly B. Halkiotis - PANalytical*
High-quality quantitative analysis of catalysts and zeolites samples by traditional XRF methods has in the past been difficult because calibration standards of suitable composition are often difficult to obtain. Improvements of sample fusion techniques in recent years allow a wide range of catalyst and zeolites to be digested and prepared as fused beads. We will present new methodology for preparation and analysis of several types of zeolites and catalysts. Samples are prepared as fused beads and analyzed using an

Axios mAX Advanced wavelength-dispersive XRF, using a wide-ranging-oxide application adapted for analysis. This methodology allows flexible and accurate quantitative analysis of several types of catalysts and zeolites used in the petroleum industry. Paper Presentation

Abstract# 156 - 3:40 PM - 20 minutes – Hibiscus - Tuesday
“Analysis of Low Levels of Phosphorous in Gasoline Using the Axios mAX Advanced Wavelength Dispersive XRF” *David G. Coler, Kimberly B. Halkiotis and Gregory L. Wortman - PANalytical*
The US Environmental Protection Agency regulates the maximum allowable concentrations phosphorus in fuels. Many refineries and service laboratories have traditionally measured sulfur and lead contents by WDXRF using ASTM methods D 2622 and 5059 respectively, but no XRF method is currently available for the determination of phosphorous in fuels by WDXRF. The EPA maximum allowable concentration for phosphorous in gasoline is 0.005g/US Gal, or 1.3ppm. Measuring phosphorous in fuels at these levels has traditionally been difficult by WDXRF because of the low sensitivity of P, contamination in support films and crystal fluorescence. We present a robust method for measuring the P content in gasoline at low levels. Paper Presentation

Abstract# 157 - 11:30 AM - 20 minutes – Iris - Wednesday
“Comparing Quantitative Analysis by Flow Modulation GCxGC vs Cryogenic Modulation GCxGC”
Kefu Sun, Bill Winniford, James Griffith - The Dow Chemical Company
Flow modulated GCxGC is easy to set up and has potentially lower cost for routine use than cryogenic modulation. Due to the high flow in the secondary column, flow modulation is not as effectively coupled with a mass spectrometer for qualitative analysis. Flow modulated GCxGC is effective though for quantitative analysis. We will focus on the various considerations for quantification by flow modulation GCxGC – limit of detection, accuracy and precision using model samples and complex process samples. Multidimensional Separations Symposium Paper Presentation

Abstract# 158 - 4:00 PM - 30 minutes – Iris - Tuesday
“Automation Audit” *Mike Arlitt - Baytek International*
In this age of tight budgets and tight margins, many labs are looking for ways to do more with less while maintaining or improving quality. “What’s my turnaround time? What’s the status of the customer’s sample? Where is the customer’s sample? How efficiently am I utilizing my instruments and technicians? How can I reduce the number of data entry mistakes we’ll make this week?” These questions and more are being tossed about with regularity in the modern laboratory. Conventional electronic data systems such as LIMS and instrument subsystems can help answer many of these questions, but the modern lab manager is searching for ways to extract more value from these and other existing assets. The Automation Audit provides an objective evaluation of lab workflow and information processing and offers suggestions for helping the lab move toward its performance objectives. Paper Presentation

Abstract# 159 - 2:20 PM - 20 minutes - Floral Hall A - Tuesday
Gulf Oil Spill Symposium “Development of a High-Throughput GCxGC Method for the Analysis of Water and Seafood Samples” *J.-M. D. Dimandja, J. Mitchell, A. Parker, N. Chamkasem, S. Pratt, V. Vega, T. Harmon, L. Mitchell - Spelman College*
In this presentation we describe the development of a high-throughput method for GCxGC analysis of contaminants in seafood and water samples that are being collected in the aftermath of the oil spill that has affected the Gulf Coast area. SPME and Quechers sample preparation methods show drastic time-compression advantages over LLE methodology. Using a target set of PAH compounds that were used as biomarker standards, we will discuss improved qualitative and quantitative analysis capabilities of GCxGC/TOF MS for potential longitudinal studies involving oil spill samples. Gulf Oil Spill Symposium Paper

Abstract# 160 - 10:20 AM - 60 minutes – Hibiscus - Wednesday
“New Breakthroughs in Analytical Characterization of Polymeric Systems from Formulation Through High Speed Processing” *Tore Fossum, Michael Ferraco, Michael Zemo - METTLER TOLEDO, INC.*

A variety of titrimetric methods have improved the accuracy and precision when quantifying the isocyanate content, hydroxyl content, acidity and water of polyurethane formulations. Thermal analysis, an important quality control step post production has struggled to answer many questions pertaining to the behavior of materials while being rapidly cooled in modern high-speed production processes. A new high speed Flash calorimetric technique will be introduced that enables the investigation of meta-stable and time-dependent transitions of materials. Very fast cooling rates allow generation of materials under real process conditions and heating rates of 40,000 K/sec inhibits reorganization to uncover previously hidden information. Polymer Characterization Workshop Presentation

Abstract# 161 - 5:10 PM - 20 minutes – Hibiscus - Tuesday
“Non-destructive Materials Identification using Finger-printing Analysis” *Kimberly Halkiotis, David Coler, Greg Wortman - PANalytical*
Comparative analysis using X-ray fluorescence spectroscopy can be a useful tool for screening and categorizing products as well as identifying counterfeit products. We will discuss a means of non-destructive consumer materials identification and separation utilizing the MiniPal direct excitation, energy dispersive X-ray fluorescence. This new finger-printing technique functions by comparing the spectra of the unknown material to a stored library of spectra of known materials, and using Chi square values to provide a best match for the analyzed material. This is an optimal tool for identifying and sorting catalysts or for wear metal analysis. Paper Presentation

Abstract# 162 - 4:20 PM - 30 minutes – Hibiscus - Tuesday
“The Analysis of Particulate Matter on Air Filters using the Epsilon 5 Polarizing Secondary Target Energy Dispersive XRF” *David G. Coler, Kimberly B. Halkiotis and Gregory L. Wortman - PANalytical*
Suspended particulate matter in the atmosphere is of concern due to the potential health risks of inhaling contaminants. Particulate matter is typically collected on Teflon filters using high volume air samplers. These filters are often analyzed by energy dispersive XRF according to EPA method I.O. 3.3. We present data from a unique Polarizing Secondary Target Energy Dispersive XRF instrument equipped with a dual target 100kV source and Ge solid state detector capable of achieving detection limits in the low ng/cm² range for 44 elements commonly analyzed in air filters. The data includes calibration methodology, detection limits and reproducibility. Paper Presentation

Abstract# 163 - 1:50 PM - 30 minutes – Hibiscus - Tuesday
“The Axios 1KW Wavelength Dispersive XRF and its Capabilities for the Analysis of Fuels, Lubricating Oils and Polymers” *Gregory L. Wortman, David G. Coler, and Kimberly B. Halkiotis - 30 minutes*
Improvements in the development of Wavelength Dispersive X-ray Fluorescence spectrometers in recent years have led to the introduction of lower power instruments. The difficulty has been that low power instruments are typically limited in analytical capability or lack a robust design to make them viable for production environments. We introduce a 1KW WDXRF built on our robust Axios high power WDXRF platform. We present performance data on typical petroleum applications, such as ASTM D2622, D5059, lubrication oils and metals in residuals fuels as well as catalysts and polymers. Paper Presentation

Abstract# 164 - 1:30 PM - 20 minutes – Hibiscus - Tuesday
“Ultra Low Level Sulfur Analysis in Petroleum Products using the Axios Petro Wavelength Dispersive X-ray Spectrometer and D2622-2010” *David G. Coler, Kimberly B. Halkiotis and Gregory L.*

Wortman - PANalytical

The Axios Petro Wavelength Dispersive X-ray Spectrometer is specifically designed to meet the increasing regulatory needs of the petroleum industry. This talk will focus on meeting the needs of ultra low level S analysis using the Axios Petro WDXRF and the new D2622-2010 method. Combining the Axios Petro and specially tuned calibration and drift correction standards allows excellent performance for the analysis of ultra low level sulfur for a variety of petroleum matrices. We will present calibration, reproducibility and repeatability data from a range of petroleum calibration matrices including Ultra Low Sulfur Diesel, Biodiesel and Gasoline. Paper Presentation

Abstract# 165 - 1:00 PM - 30 minutes – Iris - Wednesday

“Tuning Differential Flow Modulation GC x GC with Independent Column Temperature Control” *James Griffith, Bill Winniford, Kefu Sun, Jim Luong - The Dow Chemical Company*
Achieving useful and meaningful separations with GC x GC is dependent on matching the retentivity of the 1st and 2nd dimension columns. This presentation focuses on the effect of retention factor, k, in the second dimension. If it is too low then little additional resolution is gained by the GC x GC experiment. If the retention factors are too high in the second dimension peaks do not elute during a single cycle, broaden and potentially overlap thus losing resolution. Achieving the desired retention factors has been dependent on matching the appropriate film thicknesses between the 1st and 2nd dimension columns when the both separations are done in the same oven. We will show data using a low thermal mass oven for the 2nd dimension to give flexibility in adjusting the 2nd dimension retention factor and thus tuning separations. Multidimensional Separations Symposium Paper Presentation

Abstract# 166 - 1:30 PM - 30 minutes – Iris - Wednesday

“Getting the Most Out of the 2nd dimension in GC x GC” *Bill Winniford, James Griffith, Kefu Sun, Jim Luong, Daron Decker (Agilent Technologies)*
Those acquainted with comprehensive two dimensional gas chromatography know that the 2nd dimension separation is done in a very short period of time, typically 1-4 seconds. This presentation examines those constraints, answering common questions such as “Why can’t a longer time be used?” or “What is the limit on how fast the separation can be done?” We will show data on high velocity separations, > 500 cm/sec, and how the column dimensions (length, diameter, film thickness) influence the separations that can be achieved in the 2nd dimension of GC x GC with differential flow modulation. Multidimensional Separations Symposium Paper Presentation

Abstract# 167 - 12:45 PM - 45 minutes – Hibiscus - Wednesday

“GPC Analysis with Mass Sensitive Detectors - Viscometry and Light Scattering” *John A. McConville, Ian Herzberg - Brookhaven Instruments Corporation*
The use of multiple mass sensitive detectors, in addition to the conventional concentration detectors such as RI and UV, in GPC analysis has become increasingly popular for a wide range of macromolecular materials. However, the use of these detectors requires an understanding of the principles of operation and their relationship to one another to obtain successful and meaningful full data. Examples of operating conditions can be optimized will be presented. Polymer Characterization Workshop

Abstract# 168 - 4:40 PM - 30 minutes – Hibiscus - Tuesday

“New X-Ray Fluorescence (XRF) Solutions for Elemental Analysis of Heavy Marine Fuel Oils” *Al Martin, Robert Hergenrader and Ravi Yellepeddi - Thermo Fisher Scientific*
Marine fuel oils are viscous refinery residue products that must adhere to comprehensive quality specifications including ppm limits for corrosive metals, catalyst fines and used oil contamination. A more restrictive ISO quality standard for marine fuel oils is being released in 2010 along with a new Energy Institute/IP

method for analyzing 10 contaminant elements in heavy fuel oils by wavelength dispersive X-ray fluorescence (WDXRF). This study investigates sample preparation advantages and the analytical sensitivity, precision and accuracy of a unique low power WDXRF spectrometer, the Thermo Scientific ARL OPTIM'X, configured specifically for the latest developments in marine fuel oil analysis. Paper Presentation

Abstract# 169 - 9:10 AM - 20 minutes - Floral Hall A - Wednesday

Thermo Seminar - “New Evolution UV-Vis Products and Gulf Coast Applications” *Ed Zalkovsky*
Thermo Fisher Scientific has the best applications platforms for today’s Gulf Coast laboratories. From the low cost Evolution 60S, to the new Evolution 200 or premium performance Evolution 600, cost effective solutions are available from Thermo Fisher Scientific. This presentation will focus on timely UV-VIS applications, including those from the Evolution Array and Lumina fluorescence systems. Thermo Seminar Series Paper Presentation

Abstract# 170 - 9:30 AM - 30 minutes - Floral Hall A - Wednesday

Thermo Seminar Series “Unstoppable Productivity, Unmatched Performance: The ISQTM Single Quadrupole GC/MS” *Jim Edwards - Thermo*
The Thermo Scientific ISQ GC/MS system offers rugged and reliable performance and nonstop productivity utilizing a unique new source design which is ideal for continuous high-throughput operation. The vacuum interlock enables the entire source removal without venting the system. When combined with included QuanLab Forms layered application software for easy acquisition and reporting, GC/MS operation has never been this easy or productive. The ISQ is Thermo Scientific’s New Product Showcase entry. Thermo Seminar Series Paper Presentation

Abstract# 171 - 10:00 AM - 30 minutes - Floral Hall A - Wednesday

Thermo Seminar Series - “Mass Spec Advances for the Gulf Coast Gas Chromatographer” *Jim Edwards and Don Clay - Thermo*
This presentation will focus on the latest methods from our Austin GC/MS applications lab and the Thermo Scientific Food Safety Response Center. Included is the two hour analysis, sample receipt to final report, of PAHs and other hydrocarbons in seafood using the Quantum XLS GC/MS/MS. Thermo Seminar Series Paper Presentation

Abstract# 172 - 10:30 AM - 30 minutes - Floral Hall A - Wednesday

Thermo Seminar Series - “A Comparison of Porous Layer Open Tubular (PLOT) Columns for the Separation of Refinery Gases” *Robert Wiedemer and Scott Adams - Thermo Scientific*
Porous Layer Open Tubular (PLOT) columns are well suited for the analysis of light hydrocarbons such as those found in refinery gases. These highly selective columns are capable of separating low molecular weight hydrocarbons at above ambient temperatures. An increasingly wide variety of PLOT column coatings are available, including alumina deactivated with Na₂SO₄ and with KCl, as well as a range of porous polymers with varying degrees of polarity. This presentation will show the differences in selectivity of numerous types of Thermo Scientific TracePLOT columns as demonstrated by the differences in the separation of light hydrocarbons. Thermo Seminar Series Paper Presentation

Abstract# 173 - 11:00 AM - 45 Minutes - Floral Hall A - Wednesday

Thermo Seminar Series - “Trace Elemental Analysis of Environmental and Petrochemical Samples: From Optimized Sample Introduction for ICP to Utilizing Collision Cell Technology and Speciation ICP-MS” *Mike Plantz - Thermo*
The material for this presentation had not yet been released for

publication at the GCC program print deadline. Please check the website later for updated information. Thermo Seminar Series Paper Presentation

Abstract# 174 - 2:00 PM - 30 minutes - Floral Hall A - Wednesday

Thermo Seminar Series - "FCC Catalyst Screening and Characterization by X-Ray Fluorescence (XRF)"

Robert Hergenrader, Al Martin and Ravi Yellepeddi - Thermo
Reliable characterization of the complex elemental chemistries within fresh, spent and regenerated fluid catalytic cracking (FCC) catalysts is important for maximizing refining profitability. Many elemental analysis techniques require laborious chemical pre-digestion and liquefaction of hard aluminosilicate catalyst support structures, limiting analytical throughput. This study investigated X-ray fluorescence (XRF) analysis techniques to directly characterize solid FCC catalyst samples for both semi-quantitative screening and full quantification of catalyst elements and poisons for process monitoring applications. Energy dispersive (EDXRF) and wavelength dispersive (WDXRF) techniques were evaluated with and without calibration standards across several catalyst sample preparation methods. Thermo Seminar Series Paper Presentation

Abstract# 175 - 2:30 PM - 30 minutes - Floral Hall A - Wednesday

Thermo Seminar - "New X-Ray Fluorescence (XRF) designs for Petroleum and Polymer Challenges"

Al Martin, Robert Hergenrader and Ravi Yellepeddi - Thermo
The petroleum and polymer industries have a huge challenge in providing analysis of materials which seem to be in a continual state of flux. Chemical makeup of polymers, lubricants, and fuels are altered constantly to meet new functionality demands. To meet this challenge, the analyst must be able to rely on a system which will not only satisfy today's requirements but also tomorrow's needs. Thermo ARL XRF offer systems which option variations on each instrument allowing flexibility guaranteed to meet your needs today as well as tomorrow. The systems in this discussion range from a basic 50W WDXRF system which can also be configured as an ULS unit or a combination of low S and additive analyzer; a higher powered system which has enough options to satisfy every XRF application need you may ever face; to an EDXRF system with its own special brand of uniqueness. Thermo Seminar Series Paper Presentation

Abstract# 176 - 3:00 PM - 60 minutes - Floral Hall A - Wednesday

Thermo Seminar - "The Detection of Nitrogen, Sulfur and Halogens in LPGs and Gases and The Implications of New International Marine Fuel Legislation on the Analysis of Nitrogen and Sulfur in Heavy Hydrocarbons" *Marco van Aken - Thermo*
Trace levels of nitrogen, sulfur and chlorine in LPGs and gases poison catalysts and cause corrosion of pipes and valves in the refinery stream. In addition, when LPGs and gases are used as end products, nitrogen and sulfur remaining in the fuels causes environmental pollution. This talk describes the analysis of a range of gases and LPGs for the determination of trace levels of nitrogen, sulfur and chlorine. The second part of the talk discusses new maritime legislation limiting the concentration of nitrogen and sulfur allowed in marine fuel. In October 2008, the Marine Environment Protection Committee of the International Marine Organization (IMO) adopted the revised Annex VI, Prevention of Air Pollution from Ships to the MARPOL 73/78 Convention, which sets limits on nitrogen oxide and sulfur dioxide emissions from ship exhausts, with consequent control of bunker fuel sulfur content being imposed. Techniques capable of testing to this new legislation are discussed with a focus on combustion analysis using chemiluminescence and pulsed UV fluorescence technology. Thermo Presentation Series Paper Presentation

Abstract# 177 - 2:00 PM - 30 minutes - Bluebonnet - Wed
Gulf Oil Spill Symposium "Fast Polynuclear Aromatic Hydrocarbons (PAHs) by Single Quadrupole GC/MS"
Lee Marotta, Leeman Bennington, Heidi Grecsek - PerkinElmer ASLS

The ability to improve analytical detection limits is quite advantageous. When instrument parameters ensure improved detection limits, a smaller sample size may be used for extraction and method detection limits are still attained. This has many benefits including using less solvent for extraction which is safer for the environment and reduces costs. This presentation will discuss using large volume injection and simultaneous full scan / single ion monitoring to enhance detection limits of polynuclear aromatic hydrocarbons (PAHs). A micro channel switching device has been employed to backflush most unwanted components from the column and injector increasing uptime and throughput. In addition, techniques were employed to reduce analytical runtime further enhancing sample throughput. Gulf Oil Spill Symposium Paper Presentation

Abstract# 179 - 2:30 PM - 30 minutes - Ivy I - Wednesday

"Trends, Learnings, Pitfalls in Multidimensional Separations" *Bill Winniford - The Dow Chemical Company*

This is an open discussion forum between the speakers in this forum and the audience to ask questions about comprehensive and multidimensional separations. Multidimensional Separations Symposium Discussion Group

Abstract# 180 - 9:10 AM - 20 minutes - Floral Hall A - Tuesday

Gulf Oil Spill Symposium "Oil Spill Chemistry" *Ed Overton - Symposium Chair and Professor Emeritus of Environmental Sciences in LSU's School of the Coast & Environment*

A presentation describing the chemistry experienced and predicted during the recent Gulf Coast Oil Spill. Gulf Coast Oil Spill Symposium Paper Presentation

Abstract# 181 - 1:50 PM - 20 minutes - Exhibit Hall - Wednesday

"A Quick and Sensitive Method for the Analysis of Fatty Acids Present in a Biodiesel Sample Using UHPLC/MS" *Hayley Crowe, Sharanya Reddy, Ali Kettani, Silverio Iacono - Perkin Elmer Inc.*
Due to the depletion of fossil fuels, biodiesel fuel is gaining more importance and becoming an appealing alternative. Since biodiesel is produced from plant oils and animal fats, fatty acids are a primary component of the fuel. The amount of fatty acids affects the efficiency of the esterification process. Additionally, complete transesterification of the fatty acids is necessary for the fuel to be usable. Presence of fatty acids in biodiesel that have not been transesterified can cause engine degradation and produce hazardous emissions. Here we present a method that is fast and sensitive for monitoring of individual fatty acids in a biodiesel sample using ultra high pressure liquid chromatography (UHPLC) and a single quadrupole mass spectrometer (MS). Other lipid species found in the oils such as triglycerides and phospholipids can also be monitored using this method without esterification and minimal sample preparation. Quick and sensitive analysis of fatty acids in biodiesel using UHPLC/MS followed by an intuitive and easy to use data analysis software package provides a powerful and robust method for monitoring biodiesel quality. Poster Presentation

Abstract# 182 - 3:20 PM - 20 minutes - Hibiscus - Tuesday

"Advances in EDXRF for Elemental Analysis of Soils and Effluents" *Scott Fess - Applied Rigaku Technologies, Inc.*

Advances in EDXRF analytical techniques allow for improved analysis of elements in soils and wastewater using a new fundamental parameters paradigm in conjunction with an advanced optical configuration. The FP program incorporates new spectral fitting and matrix modeling algorithms for calibration without the need for large numbers of known standards. A Cartesian Geometry (CG) optical design enhances signal-to-noise, providing lower elemental detection limits for sludges, soils and sediments. For analyzing discharge wastewater, the patented UltraCarry thin film sample

preparation system gives operators a new means of quantifying hazardous metals, with detection limits in the parts-per-billion (ppb) range. UltraCarry eliminates the need for complex sample preparation, giving non-technical operators a simpler analysis technique and a lower cost of ownership. Paper Presentation

Abstract # 183 - 9:00 AM - 7 hours - Exhibit Hall A - Thursday

The user group meeting will include talks from customers, PANalytical application and service groups as well as feature a live Axios Wavelength Dispersive XRF for practical demonstration of techniques. Customers are welcome to bring samples and lunch will be served. PANalytical User Group & Demonstrations. Lunch will be provided.

Abstract # 184 2:50 PM -30 minutes - Hibiscus - Tuesday

Advances in X Ray Fluorescence technology have resulted in significantly enhanced detection performance for a number of previously difficult to quantify elements. A technical review of Monochromatic WD XRF and HD XRF techniques will be discussed and study results for various elements including Si, Hg, V, Ni, Pb and As will be presented. Sub ppm detection limits for most of these elements is now achievable as a result of developments associated with the use of innovative x-ray optics technology. These technology developments enable significant background reduction and signal-to-background ratio improvement. A review of various petroleum related applications for these new techniques will be discussed. Paper Presentation

Abstract # 185 Paper - 4:00 PM - 30 minutes - Daffodil - Tuesday

“Low-level Elemental Impurity Analysis in High Dissolved Slids Brine Samples Utilizing Simultaneous Axial ICP-OES Detection”
Steve Wall, Patrick Simmons and Doug Schrader – Agilent Technologies

The analysis of high dissolved solids samples has traditionally been a challenge on axial ICP-OES systems. With the use of a unique sample introduction system including a new design sheath gas torch, the amount of high solids that can be introduced to the ICP-OES can be driven to higher levels. The ability to introduce higher levels of dissolved solids results in the achievement of lower detection limits. The operation and use of the axial sheath gas torch will be examined along with additional analysis considerations for successful analysis of high dissolved solids samples on an axial ICP-OES system. Paper Presentation

Abstract # 186 Paper - 11:15 AM - 30 minutes - Daffodil - Tues
“Meeting Water and Environmental Regulatory Requirements with a LIMS Solution”

Jeanné A. Mensingh - EM2 Solutions, Inc.

In today's economy, meeting regulatory requirements and keeping costs low is difficult. Streamlining processes and automation is not only more efficient, it is vital to be competitive and stay in business. This presentation will showcase a LIMS solution that meets ISO 17025/NELAC requirements, is capable of seamless integration with other software, and is expandable for future growth. Thermo Fisher Scientific and EM2 Solutions have partnered together to formulate a Water and Environmental LIMS Solution based on Thermo Scientific SampleManager LIMS 10.0. This presentation will demonstrate how this Water and Environmental Solution meets key ISO 17025/NELAC requirements related to sample tracking, traceability, statement of work (SOW) and contract review (quotes and invoicing), preparation and analytical batches, instrument

integration, and reporting. Paper Presentation

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Agilent Technologies

Agilent is a leading provider of life sciences and analytical instrument systems to scientists in life sciences, pharmaceutical, environmental and chemical industries, worldwide. The company offers scientists the range of instruments including LC-MS, HPLC, Bioanalyzer, Micro array solutions, ICP-MS, GC, and GC-MS systems, as well as services needed for success in acquiring and interpreting genetic and chemical information - from sample handling, to analysis to data management and reporting. Agilent is committed to providing superior standards-based technology, designed for maximum productivity, cost effectiveness and ease in complying with regulatory requirements. **Booth # 903, 905**

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American Laboratory

Our publications are edited for North American chemists and life scientists who have a professional interest in the application of modern instrumentation to analytical chemistry, bio-analysis and applied spectroscopy. The editorial includes application notes, technical articles, conference reviews and information on the most current laboratory instrumentation. **Booth # 418**

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Analytical Reference Materials (ARMI) is an ISO certified manufacturer and distributor of certified reference materials for metals, refined petroleum products, and coal, as well as a distributor for most all of the worlds other CRM manufacturers and their products. Through its Meinhard Glass Products and Lato Scientific Glassware divisions, ARMI is also a manufacturer and distributor of precision scientific glassware for ICP and ICPMS instruments. Custom glassware is available for special R&D projects, as well as repairs for critical glassware components. Please visit its websites for electronic catalogs and additional information. The websites are: www.armi.com, www.meinhard.com, and www.latoscientific.com. **Booth # 615**

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Arizona Instrument designs, manufactures, and markets the complete line of Computrac precision moisture/solids analysis instruments. Computracs are used in research and development, quality control, and process control applications. The Vapor Pro Fx moisture analyzer accurately measures moisture levels in liquids and most oils down to 10ppm, results being achieved in as few as 3 minutes without using toxic reagents or glass. We provide comprehensive customer service including application development, training, and repair. **Booth # 917**

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Booth # 210

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Laboratory testing equipment for determining the physical properties and performance characteristics of fuels, lubricants, and materials. North American Distributors of Waukesha Engine-Dresser CFR Products, Eralytics, Falex Corporation, Normalab, PCS Instruments, Parker Hannifin, and Strama-MPS. Instrument Sales and Service. Oxidation ASTM D3241, Octane ASTM D2699 and D2700, Cetane (D613 and D7170), Vapor Pressure (D5188, D5191, D5492, D6377, D6378, D6897), Fuel Lubricity (D5001, D6078 and D6079), Particle Counters, Distillation (D86 and D1160), Flash Point (D56, D92, D93), Oxidation, Penetration, Cold Flow (D2500) and (D97) and Tribology Testing. **Booth # 214, 216**

Da Vinci Europe

Da Vinci Europe laboratory solutions is a distinctive partner for automated sampling solutions and supplier of high-performance analytical solutions. The unique combination of skills and experience in the field of analytical chemistry, robotics and instrument control software is ideal for providing total solutions for an analytical laboratory. **Booth # 220**

DC Scientific

DC Scientific is an ISO 9001 registered manufacturer of precision

glassware products and ASTM glassware, testing equipment, and accessories for the petroleum laboratory. DC manufactures products ranging from viscometer tubes to FIA Systems to temperature probes for leading brands of equipment. DC is also partnered in the United States with B/R Instrument, Paragon Scientific, Tintometer, Horiba and Tamson to provide world class products for petroleum testing. B/R Instrument provides Auto, Semi-Auto, and Manual D1160 Vacuum Distillation Systems. Paragon Scientific, a dual ISO 17025 and ISO Guide 34 accredited company, provides certified reference materials for Viscosity, CCS, Color, TAN, TBN, and Flash Point. Tintometer, an ISO 9001 registered manufacturer, products include a full range of color measurement equipment including ASTM, Saybolt, Pt/Co color and more. Tamson products include Viscosity Baths, Heating and Cooling Baths and Circulators. DC Scientific also provides service for most major brands of petroleum testing equipment and is a Tintometer, Tamson, and Horiba Certified Service Center. **Booth # 503, 505**

Dionex Corporation

Ion Chromatography HPLC, Mass Spec, Accelerated Solvent Extraction **Booth # 509,511**

Ed Martin & Associates

Booth # 315

EM2 Solutions, Inc.

EM2 Solutions, Inc. EM2 Solutions is a Quality, Laboratory, and Support Solutions Company. We help companies execute quality management systems based on ISO Standards (9001, 17025), NELAC, Regulatory Requirements (GMP, EPA) and industry best practices (ASTM). EM2 Provides comprehensive quality services such as gap assessments, auditing, technical/procedure writing, validation, training, process improvements, LIMS Project Management, and Staffing Solutions. We are able to place candidates on a contract, temporary, temporary to hire and direct hire basis. This also includes payroll services. EM2 specializes in laboratory operations within a variety of industries. Visit our website: www.em2solutionsinc.com "We Know the Chemistry to Formulate Your Personnel Solutions®" **Booth # 611**

EMD Chemicals Inc

EMD manufactures high-purity chemicals and reagents for research and analytical laboratories in industrial, academic and life science markets; high-purity chemicals for R & D, scale-up and production in pharmaceutical and biopharmaceutical industries; TLC plates and silica gel, test strips for environmental testing and microbiology products, including rapid tests for food, beverage and environmental companies. Products of interest to the petrochemical industry include our OmniSolv® high-purity solvents, OmniTrace® and SupraPur® high-purity acids, Aquastar® Karl Fisher titrators and reagents, Optifix® liquid handling devices and ACS/GR reagents for QC and environmental analysis. **Booth # 414**

Environmental Express

Environmental Express is a leading developer, manufacturer and distributor of environmental laboratory equipment and consumable supplies for commercial, governmental, industrial and academic laboratories worldwide. The company provides an entire range of laboratory products used in applications such as water/wastewater analysis, oil and grease analysis, metals analysis and hazardous waste analysis. We pride ourselves on providing innovative products, superior technical support, knowledgeable customer service and same day shipping. **Booth # 108**

EST Analytical

Our company is a world leader for VOC analysis including Purge and Trap concentrators, autosamplers and headspace analyzers. The Centurion Series is the industry standard for purge and trap autosamplers due to its reliability, high level of productivity and ease of use. The Encon Evolution concentrator handles samples with high MEQH content and provided reliable results day after day. EST is the exclusive supplier of Thermo Elementals line of combustion analyzers for Total Nitrogen, Total Sulfur, Total Chlorine and Total Organic Carbon (TOC) analysis. **Booth # 215**

Fisher Scientific

Fisher Scientific is a leading provider of equipment, instrumentation, chemicals, consumables and services to the worldwide scientific community. From chemicals to consumables, chromatography to titrators, equipment to test kits we provide the products you need to support research, testing and production. Our extensive product

portfolio is unrivaled in the industry allowing Fisher Scientific to serve as your single source for infinite solutions. **Booth # 311, 410**

Fox Scientific, Inc.

Fox Scientific, Inc. was established in 1988. We offer a full line of laboratory supplies, equipment and chemicals from a wide range of manufacturers. Our online catalog makes searching for what you need fast and easy. **Booth # 822**

Frontier Laboratories US

Frontier Laboratories US markets a unique GC inlet designed for the material characterization laboratory. Organics in gases, liquids and solids can be determined. The multi-mode inlet can be configured for the analysis of VOCs using sorbents or optimized for evolved gas analysis, pyrolysis, thermal extraction, reactive pyrolysis, thermal segmentation, UV irradiation. The system can be installed on virtually any GC/MS system. **Booth # 117**

Full Spectrum Analytics Inc.

Full Spectrum Analytics, Inc (FSA) is a leading supplier of chromatographic services manufactured by Agilent, Varian, Shimadzu, Wasson & OI Analytical. Multiple reps in Texas guarantees rapid response time and lower costs. Drop by our booth and ask about our service program. **Booth # 703**

GE Analytical Instruments

See the new Sievers InnovOx On-Line Total Organic Carbon (TOC) Analyzer from GE Analytical Instruments that offers unprecedented uptime on tough industrial process, challenging environmental and corrosive wastewater - including concentrated brine solutions. Using an innovative Supercritical Water Oxidation (SCWO) technique the InnovOX On-Line and Laboratory provide superior analytical performance, 6 month calibration stability, and measure TC, TIC, TOC, and Non-Purgable Organic Carbon (NPOC). **Booth # 920**

General Laboratory Supply

Since 1978 General Laboratory Supply has distributed reagent grade chemicals, consumables, and analytical equipment to laboratories around the world. **Booth # 211**

GFS Chemicals, Inc

Manufacturer of Watermark brand Karl Fischer Reagents and reference standards, Organic Halogen Reagent (Sodium Biphenyl) and hundreds more analytical solutions. We are also a primary manufacturer of high purity acids, ACS grade and specialty salts, Certified Reference Materials and specialty organics for a variety of industries. Our product catalog includes over 4000 items from our historical perchloric acid and perchlorate salts to advanced reducing agents such as ammonia borane. Not only a "one stop shop" for your analytical chemicals but also for specialty organics and inorganics for research and manufacturing. **Booth # 321**

Hanna Instruments

Hanna Instruments, for the past 30 years, a world leader in the development and manufacture of quality analytical instrumentation. Our products are available in desktop-in-line and portable configurations, measuring pH, ORP, DO, Chlorine and much more. **Booth # 419**

Heidolph Brinkmann

Heidolph Instruments founded in 1938 as a manufacturer of precision drive motors and engineering, is a manufacturer of premium laboratory equipment with expertise in rotary evaporation, as well as shakers, overhead stirrers, peristaltic pumps, and magnetic hotplate stirrers. We believe in Research made easy and all Heidolph products come with a 3 year warranty. Heidolph Brinkmann USA specializes in pre-sales and post-sales support of the Heidolph, Tuttnauer, Radleys, and AirClean Systems product lines out of Chicago, IL. Scientists are locally supported in the field by 9 field sales specialists. Contact a local representative to learn more about us **Booth # 1011**

Heraeus Platinum Labware

Heraeus is a leading manufacturer and refiner of Platinum Labware and custom precious metal products worldwide. Established in 1856, we specialize in crucibles, dishes, and laboratory equipment for use in the Petrochemical and other industries. Working directly with the manufacturer allows you to recover the highest value from your used Platinum Labware and apply this value directly to your order. As a recognized leader in Platinum Labware, Heraeus offers world-class customer service and technical support. **Booth # 416**

Horiba Instruments, Inc
Booth # 502,504

Horizon Technology

Horizon Technology is a leading manufacturer of automated sample preparation systems for the analysis of organic compounds in aqueous samples and Oil & Grease testing. Environmental labs who follow EPA methods for semi-volatile organics, Oil & Grease, DRO's, TPH, Pesticides, and Explosives have found our complete, automated sample preparation systems and consumables increase productivity, improve the accuracy of their results and lower operating costs. **Booth # 110**

Hunter Lab

HunterLab systems measure reflected and transmitted color of chemicals, polymers, fibers, powders, liquids and more. Chemical colors include scales such as APHA P/t/Cobalt, Saybolt, Gardner and ASTM. **Booth # 922**

HVM Technology Inc

HVM Technology Inc.- Because of the growing demand for products to be smaller and portable, HVM Technology continues to push the limits of high voltage miniaturization by offering a variety of standard and custom products ranging from single-output high voltage dc-to-dc converters to complex multiple output modulated designs. HVM Technology designs, manufacturers and markets high performance electronic products for a variety of applications in the military, aerospace, scientific and analytical fields. HVM specializes in miniature high voltage power converters. **Booth # 306**

ICL Calibration Laboratories, Inc.

An ISO/IEC 17025 Accredited Calibration Laboratory offering A2LA accredited, NIST Traceable Calibration Services for Thermometers, Hydrometers, Weights, Humidity devices and Volumetric Glassware. ICL is also a leading supplier of ASTM & non ASTM thermometers, Hart Scientific brand Platinum Resistance thermometers and Industrial RTDs, Digital Thermometers, ASTM Hydrometers, ASTM Weight sets, ASTM & Petroleum glassware, Humidity equipment, Viscometers and Viscosity Standards. For our customers involved with petroleum gauging and inspection, ICL offers ThermoProbe Digital Gauging thermometers, Lufkin Oil Gauging tapes & bobs, NIST traceable tape verification services, MMC Intl. Tri-Mode (UTI) Gauging tapes, samplers and vapor control valves, Petroleum Samplers, Factory Authorized repairs and recalibration services for both ThermoProbe and MMC Intl. as well as many more gauging accessories. For a complete listing of ICL's products and services, please visit www.icllabs.com. **Booth # 805**

Index Instruments U.S., Inc.

World wide Service and Sales, for a full range of Refractometers & Polarimeters. Specializing in high temperature measurements, of petroleum, chemicals, polymers. **Booth # 820**

INFICON

INFICON offers small, transportable, easy-to-use instruments, like our 3000 Micro GC Gas Analyzer, to make measurements possible in the lab, at the pilot plant, or in the field. With the 3000 Micro GC, there's no need to wait for lab results. Our new system provides fast gas analysis at your sampling point. You have immediate access to the data, calculated to your specifications, or you can forward data off-line for processing. Easy-to-use software enables non-chromatographers to generate data on-demand or continuously via automation. The 3000 Micro GC system is totally portable. Interfaced with a laptop, the Micro GC can be carried to any site, anywhere. To learn more, visit www.inficon.com. **Booth # 619**

Inspectorate

Inspectorate is a leading international inspection and testing company with over 4,000 employees in 122 countries. Our global network of laboratories offers the very latest in independent testing and technology and can provide precise analysis for all types of products. For information, please call 713-944-2000 x 126 or email sales@inspectorate.com **Booth # 1010**

Intertek

Intertek provides a wide range of expert laboratory testing services supporting the chemical and petroleum industry across the world, with labs located in key locations in Texas and Louisiana. Intertek chemical and petroleum labs support client quality control, research, instrument back-up and troubleshooting, and provide ASTM, ISO,

client, and internal test methods. Contact us at 1 888 400 0084 or email us at testingservices@intertek.com. Visit our website at www.intertek.com. **Booth # 115**

ISGAS, Inc.

ISGAS is a supplier of custom calibration standards for many industries - Refining, Chemical, Research & Development and many others. We offer a full range of hydrocarbon standards including - Gases, LPG/LNG, Liquids, ASTM/UOP, Sulfur, CEM, HRVOC, etc. We can ampulize you process streams, and even offer custom distillation work. We can also build gas chromatograph's for your specific needs. We specialize in HRVOC Standards. **Booth # 420**

JULABO USA, Inc.

JULABO produces temperature regulating equipment that circulates a thermal fluid for applications ranging from -91 to +335 °C; from instruments that heat only (to +335 °C) to highly dynamic instruments with a wide temperature capability (-91 to +250 °C) to chillers with up to 20 kW cooling power. JULABO manufactures liquid temperature control equipment for science, research & industry. **Booth # 515**

Justice Laboratory Software

The leading Independent Chromatography Data system designers since 1988 providing CDS systems single instrument and enterprise wide CDS to end users and OEM's in petrochemical specialty chemical and environmental applications. Chrom Perfect acquires and controls GC's from most major manufacturers including Agilent Varian Thermo Falcon Analytical. We supply standard and custom systems for NGA Sim Dis RGA as well as interface communication. **Booth # 219**

Koehler Instrument Company

US Manufacturer of petroleum testing equipment conforming to ASTM, ISO, IP and related international specifications. Major product lines include viscosity, penetration, flash point, tribology, distillation, biofuels, bioethanol, and biodiesel. Other products manufactured include heated oil test centrifuges, colorimeters, automatic distillation apparatus, automatic flocculation titrimeter, oxidation stability units (RPVOT & TFOUT), cloud, pour, and freezing point testers, cold filter plugging point, automatic titration units, aniline point apparatus, automatic density, Reid vapor pressure, copper and silver corrosion. **Booth # 610**

Lab Products, Inc.

Chromatography Supplies, Environmental Sample Containers, General Lab Supplies. **Booth # 514**

Lab Support, a division of On Assignment

Lab Support, a division of On Assignment, provides scientific contract, contract-to-hire and direct hire placement services in diverse industries such as biotechnology, pharmaceutical, nutraceutical, food & beverage, medical device, personal care, chemical, consumer products, environmental, petrochemical, material science and contract manufacturing. Since 1985 we've connected clients with the right candidate. Website: www.labsupport.com **Booth # 616**

LANCER

Lancer manufactures TI Industrial Washers engineered for the demands of the Petroleum Industry. With superior construction materials including 316 L Stainless Steel and PTFE, TI washers are ruggedly designed and built to withstand the aggressive nature of petroleum based soils of the petrochemical industry. Key features include 4 chamber sizes for maximum throughput, multi-level washing and drying, and single or double door units. **Booth # 417**

Lauda-Brinkmann

LAUDA-Brinkmann, located in Delran, NJ, is the largest of LAUDAS six global subsidiaries. Headquartered in Lauda Konigshofen, Germany, LAUDA is the leading manufacturer of temperature control equipment and systems, and highly precise measuring instruments, used in a broad range of research, development and production capacities. Founded in 1956, LAUDA has more than 50 years of experience developing premium temperature control equipment and analytical measuring devices. Key product technologies include water baths, low and high temperature circulators, chillers, industrial heating and cooling systems, process viscosity and surface tension instruments. Our products provide precise temperature control from -100oC to +400oC with up to 20kW of cooling capacity. **Booth # 701**

Lawler Manufacturing

Celebrating over 60 years serving the laboratory equipment needs of the fuels and lubricants industry. Please visit our booth to learn more about our manual and automated physical property testing apparatus. We offer cold properties equipment for cloud, pour, freeze, CFPP, and LTFT. Other equipment including gravity, corrosion, FIA, foam testing, Octane engine automation, oxidation, rust, TOST, viscosity (high and low temp.), water separability and much more. Learn how our heated tube technology replaces bulky block baths. Also, we welcome new equipment design applications, so bring us your requirements. **Booth # 403**

Lazar Scientific, Inc.

Booth # 721

LCGC Magazine

LCGC is the largest dedicated chromatography publication in North America. Our editorial covers all key growth segments, including pharmaceutical analysis, environmental, food analysis, petroleum and biofuels research, and chiral technology. **Booth # 116**

LEAP Technologies

LEAP specializes in compact low cost workstations; small high precision X-Y-Z customizable robotic platforms with many peripherals. They automate sample handling on-line, off-line, at-line for LC, GC, MS; with custom solutions in analytical processes. The CombiPAL is a multipurpose autosampler combining direct-liquid-injection, static-headspace, SPME, and thermal desorption. It is powered by Chronos Software, a powerful, easy to install and use sample management software. LEAPs name is synonymous with great support, flexible and innovative ideas. **Booth # 1003**

Matheson

Matheson is a single source for industrial, medical, specialty and electronic gases, gas handling equipment, high performance purification systems, engineering and gas management services, and on-site gas generation with a mission to deliver innovative solutions for global customer requirements. Matheson is the largest subsidiary of Taiyo Nippon Sanso Corporation, one of the top five suppliers of industrial, specialty, and electronics gases in the world. **Booth # 112**

Metrohm USA, Inc

Meet all your ASTM-testing requirements with our time- and cost-saving titration and ion chromatography systems, plus customizable process analyzers, pH/ion meters and electrodes, instruments for voltammetry measurements, oxidative stability testing and more. Quickly and easily analyze acid number, water content, sulfate, chloride. Extensive local sales and service personnel as well as 4 fully functional applications labs provide you with the best application support and services. **Booth # 308**

Mettler-Toledo, Inc.

METTLER TOLEDO offers a full range of products to compliment the needs of any laboratory. The complete line of laboratory products include balances, titrators, pH meters, density meters, refractometers, moisture analyzers and thermal analysis equipment. METTLER TOLEDO can also create a tailored service package, including routine maintenance and repair, for all product lines. **Booth # 603, 605**

MicroLiter Analytical Supplies, Inc.

MicroLiter Analytical Supplies, Inc. offers a complete product line of vials, caps, septa, inserts and 96-well Microplates for the modern analytical laboratory. MicroLiter is also introducing an innovative approach for SPE and Sample Filtration called ITSP. Instrument Top Sample Prep (ITSP) uses a CTC/PAL Sample Handler to prep samples serially while the instrument is analyzing the prior sample. View ITSP and our full product line of sample handling supplies in our booth at GCC. **Booth # 1009**

Miller & Weber, Inc

Uniquely qualified to solve temperature and density measurement quality problems in your petroleum pipeline, laboratory or field office. A calibrated/certified instrument is not enough, the quality of the measurements made with your certified instrument is as important as the laboratory used to calibrate it. Our staff of consultants (including an ISO/IEC 17025 certified lead assessor) can help. Miller & Weber, Inc. has an ISO/IEC 17025 Accredited Calibration Laboratory offering calibration services for temperature and density measure-

ment devices, including electronic gauging thermometers, glass thermometers, hydrometers and handheld densitometers. Ed Martin & Associates, Inc. supplies ThermoProbe Digital Gauging thermometers, Lufkin Oil Gauging tapes & bobs, quick sticks, NIST traceable tape verification services, MMC Intl. Gauging tapes and petroleum sampling products. We can also offer factory authorized repairs for the above products. In addition, Miller & Weber, Inc. maintains an ISO9001 certified facility manufacturing mercury and non-mercury (PerformaTherm®) ASTM thermometers to ASTM E1 and ASTM E2251, a full line of non-ASTM thermometers, ASTM and non-ASTM hydrometers and thermohydrometers. We also distribute Hart Scientific and other brands of platinum resistance thermometers, thermistors and custom made petroleum gauging probes. Viscosity standards, glass capillary viscometers, laboratory and petroleum testing glassware, densitometers, petroleum gauging equipment. **Booth # 921**

Millipore

Millipore offers cutting-edge technologies, tools, and services for scientific research and manufacturing including a full line of analyzers for particle size and counting analysis. From research through development to production, our scientific expertise and innovative solutions help customers tackle their most complex problems and achieve their goals. **Booth # 522**

OI Analytical

Instrumentation for environmental, petrochemical, pharmaceutical, water quality, food safety, flavor and fragrance, and homeland security applications, including: selective GC detectors, custom-configured GC/GC-MS systems, Purge-and-Trap Sample Concentrators and Thermal Desorbers for VOC Analysis, laboratory and on-line TOC analyzers, SFA/FIA and Discrete automated ion analysis systems, cyanide analyzers, GPC sample clean-up systems, transportable GC/Ion-CCD Mass Spectrometer for air monitoring, and ICAS - isotopic carbon analysis system. **Booth # 518**

PAC LP

PAC is a leading global provider of advanced analytical instruments for laboratories and online process applications. With a product portfolio of over 200 instruments, PAC serves industries such as refinery, petrochemical, biofuels, environmental, food & beverage and pharmaceutical. To provide its customers with cutting edge technology, PAC has large R&D resources to support its core technologies; chromatography, elemental analysis, physical properties and software applications. Part of PAC's product portfolio is AC Analytical Controls, Antek, Alcor, PetroSpec, PSPI, ISL and Walter Herzog. **Booth # 103**

Pace Analytical Services, Inc.

Pace Analytical's LabOps Division includes an Instrument Support Group (ISG) and Professional Staffing Services. ISG provides pre-qualified, refurbished chromatography instrumentation, and a variety of other analytical equipment, to companies worldwide. Instrumentation service, including maintenance, repair and qualification, is also available for GC, GC/MS, LC, and LC/MS. LabOpsProfessional Staffing Services is an effective and innovative way to acquire personnel, while also reducing costs and increasing productivity and profitability. **Booth # 415**

PANalytical

PANalytical offers a wide range of XRF instruments and analytical solutions for analysis of petroleum products including instrumentation, calibration methodology and independent quality control programs. Our flagship instrument line, the Axios, now includes two new additions: the Axios 1KW Chiller-less system and the Axios mAX Petro which incorporates our unique ZETA zero drift X-ray tube technology and Oil Trace software for highly accurate analysis of petroleum products with a single calibration. Equipped with our customized application solutions and our quality monitoring program, the Axios product line is the highest performance and most reliable XRF instrument for the petroleum industry. **Booth # 606, 608**

Parker Hannifin

We manufacture gas generators to eliminate high pressure gas cylinders from the laboratory. There is no longer need to buy and store cylinder reserves and use laboratory space. With Balston generators, you control supply. Balston gas generators provide research grade gases for LC/MS, GC, FT-IR, TOC, ICP and AA instrumentation. **Booth # 520**

PerkinElmer

PerkinElmer offers more than 100 turnkey and custom solutions with defined specifications that cover a wide range of applications and requirements in many industries - petroleum refining/petrochemical, natural gas and dissolved gases in transformer oils - providing superior analytical capabilities and ease-of-use. We offer a complete line of analytical instrumentation and software: GC, FTIR, HPLC, RAMAN Spectroscopy, UV/Vis, AA, ICP-OES, DSC, and LIMS in addition to best-in-class service offering that includes: multi-vendor, compliance and qualification, relocation, and OneSource. From crude oil to polymers, PerkinElmer brings you the complete solution. **Booth # 802, 803, 804**

Petro Industry News

Petro Industry News is a global magazine which highlights the latest technology and methods for analytical scientists in the oil related sector. Additionally, we offer an electronic version of the magazine and our website is updated daily with news for analytical chemists in the oil, petroleum, biofuel, refining and petrochemical sectors. **Booth # 221**

Petrolab Company

As a member of the AMETEK Oil and Gas Division, Petrolab Company provides petroleum and chemical analytical testing instrumentation for laboratory or field use and is your source for Grabner, Petrotest, Spectro, IKA Works, Tamson and Lawler instruments. Petrolab Company offers the greatest selection of instrumentation for analysis of Octane, Flash Point, Distillation, Vapor Pressure, Viscosity, Penetration, Oxidation, Gum Content, Foam, Ductility, Softening Point, Pour Point, Cloud Point, Benzene, Aromatics and Calorific Measurement. **Booth # 516**

Phase Technology

Precision. Reliability. Trust. Phase Technology customers depend upon our ASTM methods for freeze, cloud and pour point testing. They have confidence in our 30 years of experience testing millions of samples. Our deep knowledge of cold flow properties gives them assurance and peace of mind. Now, Phase Technology introduces the new 70Xi analyzer series - combining speed, simplicity and interactive diagnostics to deliver maximum productivity and uninterrupted uptime. Come see the 70Xi, the intelligent workflow optimizer. **Booth # 507**

Phenomenex

Phenomenex is a global technology leader committed to developing novel separation, purification and analytical chemistry solutions for the life sciences and related industries. Phenomenex's core technologies include products for liquid chromatography, gas chromatography, sample preparation, bulk purification chromatographic media, and chromatography accessories and equipment. **Booth # 620**

Pittcon 2011

Pittcon is the world's largest annual conference and exposition for laboratory science. Visit www.pittcon.org to see all that Pittcon 2011 has to offer. The latest technology and instrumentation from nearly 1,000 exhibitors from more than 85 countries, a diverse Technical Program of over 2,000 sessions, and over 100 Short Courses to enhance your educational experience. **Booth # 209**

Pollution Equipment News/Rimbach Publishing Inc.

POLLUTION EQUIPMENT NEWS, reaches over 85,000 professionals and provides information on products and services offered in the industrial and municipal environmental abatement and control field. Industrial Hygiene News reaches over 65,000 professionals who are responsible for industrial hygiene instrumentation, occupational safety and health, IAQ and emergency response. **Booth # 318**

Premier Lab Supply

XRF Sample Preparation Specialists for Liquids, Powders and Fusion Applications; Items include: XRF Sample Cups, X-Ray Films, Aluminum Cups, Binders, PHOENIX VFD Fusion Machines and Platinum Lab Ware Products. **Booth # 602, 604**

Process Instruments, Inc.

Supplier of Raman spectroscopy equipment and technology for process control in petrochemical and petroleum applications. **Booth # 506**

Quantum Analytics

Rent, lease or purchase from our inventory of new and reconditioned instruments-ready for immediate delivery. Instruments available include: GC, GC/MS, HPLC, LC/MS, Pyrolysis Systems, Thermal Desorption Systems, Purge & Trap Systems, IRD, AED, Direct Inlet Probe, TOF-GC/MS, SimDis Software, Gas Generators, Sample Preparation and Handling, Data Systems and Software, ICP/MS and UV/Vis; manufacturers include: Agilent Technologies, ASAP, Dani, Diablo, Frontier Laboratories, JAS, LEAP Technologies, Markes International, Matheson Tri-Gas, Scientific Instruments Manufacturer, Teledyne Tekmar and more. **Booth # 1014, 1016**

Ramin' Corporation

Manufacturer of precision laboratory products for analytical chemistry and petroleum testing laboratories since 1965. Ramin manufactures virtually every piece of glassware specified in ASTM and ISO methods. Our products are sold internationally under the Raminbrand name, and as products manufactured for other companies under their brand name (OEM Manufacturing). **Booth # 317**

Restek Corporation

Restek develops and markets innovative columns, parts and accessories, and calibration chemicals for gas chromatography and HPLC. Our products are used by a broad spectrum of analysts in research and development, production, quality assurance, and teaching laboratories. **Booth # 310**

Rheotek USA, Inc

The PSL-RHEOTEK range of instruments is manufactured in England by Poulten Selfe & Lee Limited. The company has been specializing in viscosity measurement for over 60 years. Today, the company manufactures the PSL-RHEOTEK Auto KV range of automated kinematic viscometers offering full compliance with ASTM D445. On the premises in the UK, the facilities include a glassblowing workshop, an in-house ISO 17025 accredited calibration laboratory as well as manufacture and R&D in automated viscometry. **Booth # 718**

RICCA Chemical Company

Chemical testing solutions including standardized acids, bases and other titrants; pH buffers; atomic absorption, ICP, ion chromatography, ion specific electrode, and other standards; pH and chemical indicators; in vitro diagnostic reagents; ASTM, APHA, EPA, AOAC, USP, ACS, and other solutions for water, environmental, chemical, food, beverage, petrochemical and other analyses. **Booth # 314**

Rigaku Americas Corp

Rigaku provides the world's most complete line of analytical X-ray instrumentation for the petrochemical industry. Both full-sized laboratory systems and portable/benchtop systems for use in the field are available. Applications include a full range of elemental analyses-such as S, Cl and P content in fuels-by X-ray fluorescence and measurement of phase composition in muds, rocks and drill cores by X-ray diffraction. **Booth # 904**

Rudolph Research Analytical

Density Meters for ASTM D1250, D4052, and D5002, Refractometers to meet ASTM D1218, D1747 and D5006 and ECS Easy Clean, Single Sample Load System which can be attached to a Density Meter and/or Refractometer. The ECS provides a good cleaning solution before and after sample load, No cross contamination, accuracy, repeatability and reproducibility. Automatic Refractometer line includes 6 different models with electronic cooling and heating, wide Refractive Index range (1.3 - 1.7 RI). Automatic Density Meters with innovative and exclusive features designed to meet the most demanding applications. **Booth # 302**

S&S Professional Services

As an industry leader in scientific staffing, S&S Professional Services has been in business since 1994. We specialize in placing all levels of laboratory personnel, chemical operators, and engineers on a temporary, temp to hire and direct hire basis. We take pride in our staff of degreed scientists that can accurately match employers with qualified job seekers. "We've got your personnel needs down to a science!" **Booth # 622**

SCP Science

SCP Science is a successful privately owned manufacturer and distributor of analytical equipment, supplies, standards, reagents, and certified reference materials for the inorganic analytical laboratories market. Products include NOVAWAVE- A new category of Automated Microwave Digestion and extraction system; CONOS-TAN- oil calibration and verification standards; ICP and ICP MS supplies; DigiPREP family of graphite black digestion systems and accessories; AccuSPEC high purity acids and reagents, available for trace metal analysis; XRF sample preparation equipment supplies, including automated and manual presses, binder and blending agents, AluCAP pellet reinforcing caps, thin film window material, sample cells, sulfur in oil standards, and AccuSPEC fusion fluxes; and COD digestion system with AccuSPEC COD digestion tubes. **Booth # 223**

Separation Systems, Inc.

Booth # 704, 706

Seta Analytics, Division of Stanhope-SETA

Booth # 723

SGE Analytical Science

Manufacturer of Analytical and Life Science Instrument Consumables- manual and autosampler syringes, e-Vol"- digital liquid volume measurement and dispensing device, forte capillary GC columns, MEPS (Micro Extraction by Packed Sorbent), premium range of inert LC columns "ProteCol", ferrules, fittings (including SilTite" FingerTite ferrules for GC), septa, micro valves, inlet liners, tubing, GC/MS Supplies - ETP electron multipliers, ms NoVent II. **Booth # 304**

SGS North America Inc

SGS is the worlds leading inspection, verification, testing and certification company. Oil, Gas & Chemicals Services is a global provider to the petroleum and chemical industry. We are committed to adding value for our customers by helping to maintain our customers reputation for high quality products and reducing the commercial and environmental risks associated with the production, trading, distribution and storage of oil, gas and chemicals. Since analysis results are essential to any commercial and technical decisions that you make, SGS laboratories have the professional staff and modern instrumentation to meet your needs. Quality assurance standards are constantly monitored through participation in numerous industry and internal round robins.

Booth # 720

Shimadzu Scientific Instruments, Inc.

Shimadzu offers a full line of analytical instrumentation, including UV Visible and Fluorescence Spectrophotometers; FTIR Spectrometers; Automated FTIR Microscope; HPLC systems and components; LC/MS; Gas Chromatography; GC/MS; MALDI-TOF Mass Spectrometers, Data Stations for Spectroscopy and Chromatography; Thermal Analyzers, TOC, Atomic Absorption Spectrometers, ICP, EDX, Particle Size Analyzers, Balances, Capillary Rheometers, Mooney Viscometers, Universal Testing Equipment and more. **Booth # 405, 407**

Specialty Gas Report

Specialty Gas Report is a quarterly magazine dedicated to the producers, distributors, and users of Specialty and Medical Gases. Topics are critical to all aspects of specialty and medical gas production, analysis, distribution and compliance with various government regulations. It is necessary reading for anyone producing, selling, and using specialty and medical gases.

Booth # 205

SPECTRO Analytical Instruments

SPECTRO Analytical Instruments is a global leader in the design and production of spectrometers for elemental analysis. SPECTRO offers a full line of both ICP and EDXRF instrumentation for a wide range of applications in the chemical, petrochemical, environmental and general industrial markets. SPECTRO has also introduced the SPECTRO xSORT handheld XRF system for fast and safe testing of metal structures and environmental samples.

Booth # 617

Spectro Incorporated

Spectro Incorporated specializes in instrumentation for machine condition monitoring based on oil and fuel analysis. The mainstay of Spectro's products is the Spectroil family of optical emission

spectrometers being the primary instrument for elemental analysis for many labs and most of the world's military organizations. This year we have added a new member to the Spectroil family, the Spectroil Q100. Our other products include SpectroLNF Q200 Wear Shape Classifier and Particle Counter, the SpectroVISC family of viscometers, the SpectroFTIR family, Spectro FluidScan Q1000, SpectroT2FM Q500 Ferrography System, and the SpectroFDM Q600. **Booth # 823**

StanCo Scientific Inc.

StanCo Scientific, Inc. provides service, calibration and training for laboratory testing instrumentation. We also offer annual and semi-annual PM service contracts. We are the North American distributors of Rofa Austria crude assay instruments and are sales representatives for TECA, Tanaka, and Koehler. StanCo Scientific is excited to announce that we now refurbish 501C and T meters, and heater controllers for knock and cetane engines. Most of these repairs are completed on a flat fee basis. **Booth # 702**

Supelco

Supelco, a subsidiary of Sigma-Aldrich, provides chromatography columns, reagents, standards, and supplies for analysis and purification. Some product areas are: Ascentis® HPLC columns, Discovery SPE products, air monitoring materials, Equity® and SLB"-5ms capillary GC columns, packed GC columns, chiral columns, SPME, standards, adsorbent resins, carbon adsorbents, and chromatography accessories. Derivatization, high-purity LC-MS and headspace solvents and customized products and services for application development, resin processing, and small-unit packaging are also available. **Booth # 1004**

T. D. Stringer and Associates, Inc.

KNF Neuberger-KNF is the source for durable, oil-free, PTFE lab vacuum and liquid dosing pumps, and custom heated-head corrosion resistant, NEC Ex.Proof process pumps. Hamilton Beach-lab mixers, blenders **Booth # 1017**

TECH 2000

TECH 2000 specializes in scientific & technical staffing on a temporary/contract, "temp to hire", and a direct hire basis. From entry-level Lab Technicians to Senior Chemists and Lab Managers, TECH 2000 can help companies successfully meet and deal with fluctuations and challenges in their laboratory & technical operations staffing by enabling them to quickly add personnel for short or long term assignments. **Booth # 217**

Teklab Inc

Distributor of GC consumable supplies, Manufactures packed Columns. A stocking distributor for Hamilton, SGE, Precision Sampling, and Valco Instruments. All varieties of vials, bottles, jars, filter driers, inlet liners, septa, swagelok fittings, sample bags, ferrules, caps, closures, etc... **Booth # 111**

Teledyne Leeman Labs

Teledyne Leeman Labs offers a complete line of analytical instrumentation for elemental analysis including Inductively Coupled Plasma (ICP) Spectrometers, Mercury Analyzers including cold vapor atomic adsorption (CVAA), cold vapor atomic fluorescence (CVAf) and Atomic Absorption with Thermal Decomposition for solid sample analysis. To complement these systems, we offer a line of ICP Standards, available in single and custom multi-element formats, and mercury reagents. **Booth # 621**

Teledyne Tekmar

Teledyne Tekmar, leader in analytical instrumentation, produces Volatile Organic Compound (VOC) and Total Organic Carbon (TOC) / Total Nitrogen (TN) Analyzers. Tekmar's instrumentation provides unparalleled accuracy, precision, throughput and robustness. All instruments have 21 CFR Part 11 software tools available for compliance needs, validation documentation, and service and training. **Booth # 623**

Thermo Scientific

Booth # 303

Tosoh Bioscience

With over 30 years experience in liquid chromatography, Tosoh has a history of introducing pioneering products designed to aid scientists in overcoming bottlenecks in their laboratory. This years booth will feature a dedicated system for GPC analysis, the EcoSEC GPC system, and our TSK-GEL SuperMultiporeHZ

semi-micro GPC columns. The EcoSEC GPC system delivers unsurpassed efficiency, reliability, and reproducibility and is on display at our booth.

Booth # 517

UIC, Inc

Instrumentation for the analysis of CO₂, SO₂, and H₂S in amine scrubbing solutions. We also manufacture semi-automatic viscosity systems compliant with ASTM D445 and can analyze up to 12 viscosities simultaneously. Also available are Vapor Pressure Osmometers for the determination of number average molecular weights in polymers. **Booth # 423**

United Chemical Technologies

UCT is a leader in the field of solid phase extraction technology. Our range of highly reproducible solid phase extraction cartridges all the chromatographer a consistent extraction technique, and our expertise in silane manufacturing allows greater control of the chemical processes involved in producing our bonded phases. We provide a wide array of products including SPE cartridges for multiple EPA methods, bulk sorbents, disk manifolds and specialty chemicals including silanes, silicones and platinum catalysts. WWW.UNITEDCHEM.COM **Booth # 203**

Valco Instruments

VICI Valco Instruments Co., Inc. is a designer and manufacturer of standard and custom valves and fittings for precision analytical, biomedical, and biocompatible instrumentation. Products also include a variety of related products including pneumatic and electric actuators, tubing and sampling loops, heated enclosures, valve sequence and temperature controllers, gas purifiers, GC detectors, and digital interfaces. We also manufacture devices and instrumentation for the generation of calibration gas standards, containment traps and gas specific purifiers. **Booth # 915**

Van London-Phoenix Co

Van London-Phoenix Co (VL-PC) manufactures a variety of electrodes and sensors for pH, conductivity, ORD, Dissolved Oxygen, and ion-specific applications. Direct replacements for laboratory or field hardware are available for all major brands. VL-PC specializes in custom sensor design for harsh environments and a sizable inventory of sensors, analyzers, and meters are available to expedite the orders in process. **Booth # 521**

VHG Labs

Calibration Standards and Reference Materials including metallo-organic standards for the analysis of wear metals, biodiesel, metal additives and contaminants by ICP, RDE, DCP or XRF; multi and single-element sulfur, chlorine and nitrogen standards for ASTM methods; reference materials for the analysis of viscosity, flash point, pour point, cloud point, freeze point, TAN and TBN in accordance with ASTM methods; fuel dilution standards; soot content standards; crackle test references. Consumables for ICP, ICP-MS, AA, GFAA and XRF instrumentation. **Booth # 121**

VWR International, LLC

Laboratory Supplies **Booth # 106**

Wasson-ECE Instrumentation

Our company specializes in configuring, modifying, and customizing gas chromatographs exclusively from Agilent Technologies. We design a system that may add extra ovens, valves, columns, electronics, software, and specialized components to yield a complete solution for each customer and sample condition. Wasson-ECE also provides a variety of hardware including autosamplers, concentrators and vaporizers, to complete your analysis. Contact us today for your custom GC analysis needs. **Booth # 614**

Waters Corporation

Waters helps laboratory-dependent organizations by providing breakthrough technologies and solutions. Pioneering a connected portfolio of separation and analytical science, laboratory informatics and mass spectrometry, Waters provides the tools to improve the quality of today's science and explore the infinite possibilities of tomorrow. Waters, The Science of What's Possible. **Booth # 320, 322**

Wilks Enterprise, Inc.

Portable, easy-to-use InfraCal Analyzers and InfraSpec VFA-IR Spectrometer for various on-site biofuels measurements, including the blend quality of biodiesel in diesel fuel (100 ppm to 100 percent)

or ethanol in gasoline (0 to 98%) and oil in water and wastewater for compliance with discharge permits. Rugged, field-proven infrared methodology that is ideal for use by non-technical personnel and eliminates the need to wait for off-site results. **Booth # 722**

Wilmad-LabGlass

Wilmad-LabGlass, an ISO 9001-2000 Certified Company, has been manufacturing and distributing laboratory and scientific glassware for over 70 years. Wilmad is a leading manufacturer of high precision engineered glass components. Wilmad is also the market leader in Nuclear Magnetic Resonance Sample Tubes (NMR) and Electron-Paramagnetic-Resonance (EPR). LabGlass manufactures and distributes a wide variety of specialty laboratory glassware products and equipment. **Booth # 821**

XOS

XOS is a leading global provider of laboratory and On-Line x-ray based systems for sulfur and chloride analysis. In use by over 700 leading companies world wide, XOS analyzers insure product quality and protect against costly fines. This advanced technology has allowed XOS to produce its own line of elemental analyzers including the Sindie 7039 and 6010, the Clora and the worlds first portable sulfur analyzer, the Sindie OTG. Both the lab and On-line systems offer rugged low maintenance designs while using no helium or costly combustion and carrying gases. **Booth # 316**

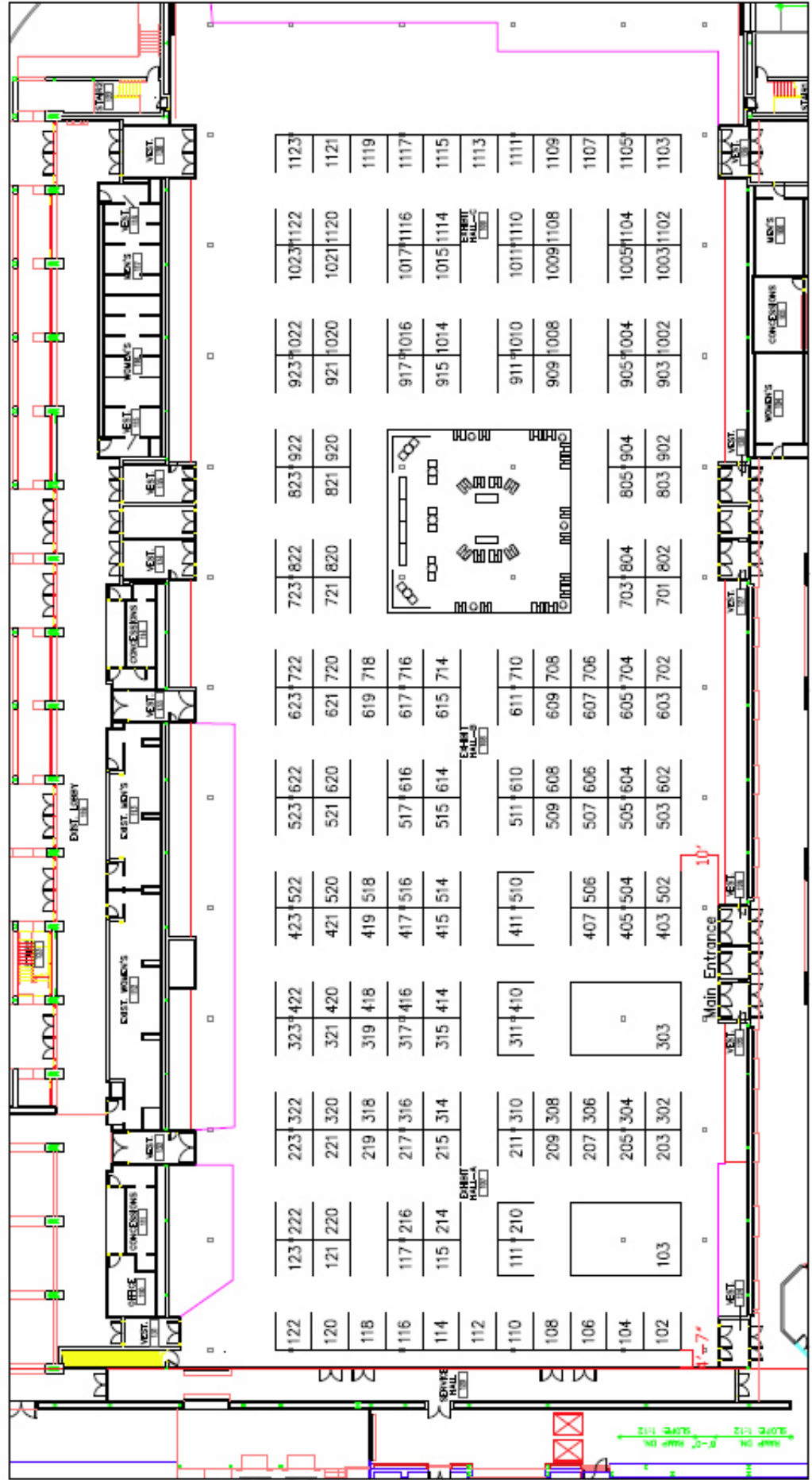


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