

Gulf Coast Conference

Moody Gardens Conference
Galveston, TX

Thermo Scientific Exhibitor Seminar Agenda

Tuesday, October 14, 2014 / Bluebonnet Room / 9:00 a.m. - 12:00 p.m.

Presentation	Time
<p>Applications of Discrete Analyzer for Chemical/Petrochemical Parameters</p> <p>The discrete analyzer provides an integrated platform for two common chemistry measurement techniques, photometric and electrochemical (ECM), which can be run in parallel. Simultaneous determination of several analytes from a single sample and many automated features ensure efficiency in analysis. The unique low-volume cuvette design allows less reagent usage for lowered operating costs. Ready-to-use system kits for common applications eliminate time-consuming reagent preparation, allowing additional cost savings.</p>	9:00 a.m.
<p>High Pressure Ion Chromatography</p> <p>High-pressure ion chromatography systems enable continuous operation at system pressures up to 5000 psi, making it possible to use new, smaller 4 μm particle-size ion-exchange columns in capillary and analytical scale formats. Smaller particle sizes can increase chromatographic efficiency, with benefits for analyte resolution. In this seminar we will supplement the theory with applications of interest to the chemical and petrochemical analysts.</p>	9:30 a.m.
<p>Overcoming Challenging Matrices in Ion Chromatography</p> <p>Ion Chromatography methods are used to routinely measure anions, organic acids, cations and amines in a wide variety of water (and mostly water) sample matrices. This seminar will focus on techniques used when approaching a high ionic strength sample or one with limited solubility. All aspects of the method will be discussed including column choice and mode of suppression. You will learn how techniques for solid phase extraction and combustion can now be automated. New techniques for sample enrichment after combustion will be presented.</p>	10:00 a.m.
<p>Analysis of Anions and Cations in Produced Water from Hydraulic Fracturing using Ion Chromatography</p> <p>Treatment and reuse of wastewater from hydraulic fracturing has reduced the water and disposal requirements of this process. Knowing the composition of ions in wastewater can be used to develop effective treatment strategies and optimize fracturing fluids created from this water. This presentation describes the use of ion chromatography to determine anions and cations in produced water from three different hydraulic fracturing sites. Considerable variation in ion concentration was found, which was attributed to differences in the geology of the locations from which samples were obtained.</p>	10:30 a.m.

See more on side two 

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<p>Coal Characterization by Organic Elemental Analysis</p> <p>Elemental analysis is fundamental for the characterization of coal to ascertain the quality needed to utilize it in a efficient and environmentally sound manner. Therefore, the use of exact analytical techniques, better still if they are automatic, is required. The Thermo Scientific™ FLASH 2000 CHNS/O Analyzer, which is based on the dynamic combustion of the sample, provides quantitative and automatic simultaneous CHNS determination and the Oxygen determination by pyrolysis. The dedicated Thermo Scientific Eager Xperience software allows automatic heat value calculation and the evaluation of the CO₂ emission trade. This paper will show CHNS/O data of several coal samples to demonstrate the performance of the system.</p>	10:50 a.m.
<p>Automatic Determination of Greenhouse Gases by GC</p> <p>A gas chromatography system dedicated to the determination of greenhouse gases was optimized to provide higher productivity and direct sampling from the vials used in the field to collect the air samples. Some adjustments in the autosampler to the specific needs of this application and the development of the ideal chromatographic conditions allowed a reduction of about 30% at the analysis time. The results reliability obtained with this chromatographic system was proven by good area repeatability, linearity, separation efficiency and low limits of detection and quantification.</p>	11:20 a.m.
<p>Automated, Rapid and Reliable Determination of Dissolved Gases in Water by Static Headspace – Gas Chromatography</p> <p>Hydraulic fracturing, the fracturing of a rock by a pressurized liquid is a well stimulation technique in which typically water is mixed with sand and chemicals, and the mixture is injected at high pressure into a wellbore to create small (< 1mm) fractures in order to maximize fluid removal and well productivity. While this once-very diffused technique makes accessible big amounts of formerly non-accessible hydrocarbons, the dissolved gases have become a controversial environmental and health matter with some countries completely banning the practice. Public outcry over preservation of water quality has led the U.S. EPA and other state agencies to investigate the impact of hydraulic fracturing on the quality of environmental waters. Some procedures for testing waters for dissolved gases through static headspace sampling exist already, like RSK 175 standard operating procedure, but since the target compounds are light hydrocarbons from methane through propane, are extremely volatile, a closed sampling system is required. A high throughput test method using robust, automated and relatively inexpensive instrumentation like static headspace and gas chromatography with flame ionization detection is used, and data will be shown for the quantitative determination of dissolved gases in ground, waste and drinking waters.</p>	11:40 a.m.

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