



ACS Division of Analytical Chemistry Pittcon 2012 in Orlando, Florida, March 11 – 15, 2012

The ACS Division of Analytical Chemistry is pleased to announce that we are again programming at Pittcon in 2012. Find below a summary of our 8 invited symposia, 4 contributed oral sessions, and a poster session to be held on Monday, March 12. Also, please join us for a reception the evening of Tuesday, March 13 to connect with friends and learn more about Division activities.

Invited Symposia

Measurement Tools for Reactive Oxygen and Nitrogen Species - Understanding the Good and the Bad: Reactive oxygen species (ROS) and reactive nitrogen species (RNS) often have a negative connotation due to their oft-cited presence in cell damage, apoptosis, and disease. However, many of the molecules involved in the formation of these ROS/RNS are actually beneficial under normal physiological states. An improved understanding of the balance between the molecules involved in ROS/RNS formation and their resultant metabolites is necessary. This session will highlight tools and the latest biotechnological efforts for ROS/RNS detection.

Integrated Microfluidics: A long-stated advantage of microchip-based systems is the ability to integrate multiple processes; however, such systems are just now beginning to be utilized for real-world applications. This session will highlight recent work in which multiple processes such as sampling, fluidic transport, cell culture, cell manipulation, separations, and detection are integrated into one device, with a focus on the applications that this technology enables.

Looking Ahead to a New Era of Analytical Chemistry Education: This symposium will highlight broad issues impacting training in the analytical sciences. Topics that will be discussed include Council of Chemical Research initiatives centered on graduate education, strategies for funding instructional program development, key components of an effective responsible conduct of research program, perspectives from outside the US and best practices in laboratory safety.

Multidimensional Chromatography: This symposium will focus primarily on recent advances in comprehensive two-dimensional liquid chromatography (LC x LC), including both theoretical and application oriented aspects of the methodology. Sufficient background will be provided so that the material will be accessible to conferees new to the methodology. Speakers will then build on this background to report on the most recent advances in their respective areas of expertise.

Use of Ionic Additives in Separations: Ion-pairing agents are mobile phase additives used to improve the reversed phase HPLC of charged compounds, however, the mechanism is not completely understood. Ionic liquids have been shown to be versatile media for micro-scale and preparative separations, as applied to liquid-liquid extraction, membranes, HPLC mobile and stationary phases, and stationary phases for GC and SFC.

Young Investigator in Separation Science Award: This session will feature the recipient of this award and other speakers in related areas of separation science.

Differential Ion Mobility Spectrometry (FAIMS): New Instrumentation and Applications: Field Asymmetric waveform Ion Mobility Spectrometry, based on the nonlinearity of ion motion in gases, is becoming a major tool for rapid separation and identification of gas-phase species. This symposium will cover the latest developments in stand-alone FAIMS and FAIMS/MS. Talks from academia, government labs, and industry will present new instrumental approaches and applications to proteomics, metabolomics, explosives detection, and other areas.

Hydrogen Deficient Radicals for Biomolecular Characterization by MS: Characterization of proteins and peptides is critical for establishing and understanding virtually every biochemical pathway. Hydrogen deficient radicals can mediate molecular fragmentation via pathways which are largely charge independent. Radical directed dissociation is typically orthogonal to other fragmentation approaches and offers unique capabilities, such as site directed dissociation. This session will describe methods and approaches for both generating and interrogating radical species with mass spectrometry.

Contributed Sessions

It's not your Grandmother's Quant Course Anymore: New Tactics for a New Age: Times change and so do the topics and approaches found in undergraduate analytical chemistry courses. This session will take a look at new web tools, on-line textbooks, role playing, and interdisciplinary applications that have transformed a course known for the tedium of endless titrations into what is arguably one of the most transformed and modern of the chemistry subdisciplines.

Celebrating the Future of Analytical Chemistry – the ACS Division of Analytical Chemistry Graduate Fellows: This session will highlight the research being done by recent fellowship recipients and will recognize the donors who support the Analytical Chemistry Graduate Fellowship program.

Fast Separations: The need for obtaining HPLC results quickly has become a challenge for the analytical chemist. Due to the analytical workload, separations must now be done in a few minutes or even seconds. In this session, we will examine new chromatographic technologies for obtaining data quickly and with good chromatographic resolution. Presentations will describe both new instrumentation and chemistry approaches to obtaining results in a shorter amount time.

Modeling Chromatographic Systems: One effective strategy for improving separations method development and for empowering workers is to replace laboratory experimentation with models and virtual experimentation. For models to be useful they must be accurately based on sound theory, comprehensive, and easy to implement. We will explore theory in the development and refinement of models, the expression and use of models in software, and the application of models and software to achieve new understanding of separations and to develop better methods for specific applications.

Poster Session: ACS Poster Session on Monday, March 1, 2012.