

VENDOR SEMINAR



Thursday 7th Nov. 2013

Innovations in food analysis: Time-of-flight mass spectrometry coupled with sophisticated separation and sample preparation techniques.

Talk #1 Detailed food sample examination: One step target and non-target analysis of contaminants by GC-hr-TOF MS

Jitka Zrostlíková¹, Tomáš Kovalczuk¹, Kamila Kalachová², Lucie Drábová², Jana Hajšlová²
1 – LECO European Technical Centre Prague ; 2–Institute of Chemical Technology, Prague

Today requirements in the analysis of food contaminants target at low ppb concentration levels and require confident confirmation of identity. At the same time, the methodics of sample preparation tend to be more time-efficient and universal, which results in less clean extracts and more potential matrix interference. Therefore new technologies of GC- and LC-MS analysis need to be implemented to meet the above requirements. New LECO multireflecting GC-TOF MS provides mass resolution 50,000 (at m/z 219) and mass accuracy 1 ppm at data acquisition rate up to 200 Hz. In this presentation the results from the analysis of pesticide residues and other contaminants in heavy food matrices will be demonstrated.

Talk #2 “Productivity and Simplicity” Automation of Sample Preparation workflows for the Food Laboratory

Oscar G. Cabrices
GERSTEL, Inc. USA, Linthicum, MD 21090

Food Safety laboratories around the world are trying to find ways to minimize sample preparation and enhance productivity. The adaptation of modern GC/MS and LC/MS instrumentation is desired due to the high sensitivity and selectivity they provide. This presentation will describe how different sample preparation technique can be simplified and automated using the GERSTEL MPS autosampler for food residue analysis.

Some of the applications that will be highlighted are:

- Derivatization and Extraction of Glyphosate and other polar pesticides from drinking water and food commodities
- Extraction and determination of mycotoxins in corn and feed samples
- Determination of Total Fat, Saturated Fat, Monounsaturated Fat and Trans Fat Content in Food Samples
- Extraction and Detection Acrylamide in Brewed Coffee Samples

Talk #3 Analysis of Herbal Teas for Pesticides and Biologically Active Compounds with QuEChERS and GCxGC-TOFMS

Jack Cochran, Michelle Misselwitz, Julie Kowalski
Restek Corporation, Bellefonte, PA, USA

The QuEChERS sample preparation method was applied to herbal teas, which are advertised to have important health benefits or even medicinal properties. The powerful separating power of GCxGC was combined with a TOFMS to screen for biologically active compounds in these tea extracts via full mass spectra. A GCxGC-TOFMS method was also developed to do pesticide analysis on the same QuEChERS extracts.

