**November 3, 2011 (13:15-14:15)**

SIGMA-ALDRICH®

VENDOR SEMINAR:

# NEW INNOVATIVE CHROMATOGRAPHY COLUMNS AND METHOD OPTIMIZATION FOR FOOD APPLICATIONS

## Use of Ionic Liquid Stationary Phases in the GC Analysis of Food Volatiles

P.Q. Tranchida, Carla Ragonese, Paola Dugo, Luigi Mondello

In recent years there has been an increasing interest, amongst researchers operating in the chromatography field, directed to the use of ionic liquids (IL). The latter are a group of low melting-point, non-molecular solvents with differing solvation properties, in relation to the particular cation-anion combination. Gas chromatography, using IL stationary phases, has been reported in the analysis of essential oils, PAHs, chlorinated pesticides and straight-chain saturated fatty acid methyl esters (FAME), etc. The use of IL phases has also been reported in the field of tuned pressure dual-column and comprehensive two-dimensional gas chromatography.

The present lecture is focused on the evaluation of use of a series of IL stationary phases in the analysis of a variety of real-world food samples. The high selectivity of IL phases in specific food applications is fully demonstrated.

## Determination of Herbicides at low trace level (ppt), using water sample direct injection in UHPLC/MS/MS couple with RP Amide and F5 Ascentis Express fused core HPLC column

E.Belotti, L.Meni, M.Ruggeri and R.Ferrari

The purpose of the experiment was to test the possibility to inject, without any extraction or purification process samples directly in LCMSMS of drinking water or groundwater. To have a simple and robust system for the rapid recovery and improving the reproducibility of the method to use routinely. Furthermore to compare columns of different polarity and selectivity to improve the chromatographic profiles of metabolites of atrazine, in particular the desethyl desisopropyl atrazine.

## Intravalidation of multiresidual methods for Mycotoxines in cereals at ppb level using Ascentis Express RP Amide and F5, couple with UHPLC/MS/MS

R.Ferrari, E.Belotti, L.Meni, M.Ruggeri

The determination of multiresidual Mycotoxine in cereals has become nowadays a routine analysis. The optimization of analysis time, the limit of detection and the robustness of the method are important parameters for the validation and certification of an optimum method. This Presentation describes the pairing of innovative UHPLC, Fused Core HPLC column technology and LC / MS / MS optimization for the validation of a fast, efficient and reproducible method, considering the issues of separation and detection of some mycotoxins.