

November 3, 2011 (7:30-8:30)



VENDOR SEMINAR:

## **INNOVATIVE TOOLS FOR FOOD ANALYSIS WITH HYPHENATED TECHNIQUES**

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### **Innovative tools for food analysis with hyphenated techniques**

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Modern food quality and safety requires highly sensitive and flexible analytical instrumentation. This includes hyphenation of technologies like GCxGC(q)MS, MDGCMS and LCxGCMS. Single quadrupole MS technology is well established in standard analytical procedures. In GCxGCMS however sampling speed of quadrupole MS systems was too low to provide quantitative analysis over a reasonable mass range adapted to the application. The new Shimadzu GCMS QP2010 Ultra allows 50 spectra (scans) (max 100 spectra/sec, 20 000 amu/sec) per second over a mass range of more than 300 amu which is sufficient for pesticide residue analysis. Each modulated peak has more than 15 data points (scans) which allows precise quantification.

In flavor analysis very often coelutions appear in branches of a chromatogram which favors classical heart cut MDGC analysis. The innovative Shimadzu MDGCMS-2010 allows MS identification in the first and second dimension (flavor profiling). All Method relevant parameters including column dimensions are stored in the method files and regions of the first dimension which has to be separated further are defined as transfer peaks by simple mouse clicks in the stand by (reference chromatogram). No shifts of uncutted peaks are observed due to the unique designed multi deans switch of the MDGCMS-2010.

In pesticide residue analysis of fat containing matrices (fat content larger than 3%) still GPC clean up has to be done prior to GCMS analysis. In off line GPC this need manual operation. In the Shimadzu on line LC-GCMS system all modules are software controlled. Automated sample clean up is therefore easily possible. The system can also be used as a comprehensive LCxGCMS system.