



AL152: HPLC-ICP-MS/ICP-MS



Training Description:

HPLC is used for separating, detecting and analyzing a variety of materials, including organic compounds and polymers. HPLC size-exclusion chromatography separates molecules based on differences in their molecular weights. Compounds varying in molecular weight from a few hundred to 10 million daltons can be easily separated. Three methods (laser light scattering, refractive index and UV-VIS) are used to detect the separated compounds and to characterize the components present. This technique provides valuable data on formulations for batch to batch comparisons.

This course is designed to provide participants with a detailed and up-to-date overview of HPLC-ICP-MS/ICP-MS. It covers the latest techniques in analyzing metal elements and heavy metals in food using ICP-MS Agilent equipment and its applications; the HPLC-ICP-MS in separating arsenic; the ICP hardware and mass detectors; the HPLC device and its applications, analysis of sugars in honey, interference, inter-element correction and isobaric processes; the hyphenated techniques, HPLC-ICP and ETV-ICP-MS; and troubleshooting methods.

Training Objective:

By the end of the training, participants will be able to:

- ✓ Apply the latest techniques in analyzing metal elements and heavy metals in food using ICP-MS Agilent equipment and its applications
- ✓ Use HPLC-ICP-MS in separating arsenic
- ✓ Recognize ICP hardware and mass detectors
- ✓ Identify the basic of HPLC device and its application and the analysis of sugars in honey
- ✓ Carryout interference, inter-element correction and isobaric processes
- ✓ Employ hyphenated techniques, HPLC-ICP and ETV-ICP-MS
- ✓ Explain the applications used in food analysis
- ✓ Discuss troubleshooting methods

Training Designed for:

This course is intended for food control specialists, scientists, researchers, laboratory staff and anyone involved in analyzing metals and heavy metals in food samples.

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Origins of Emission Spectra
- ❖ Origins of Mass Spectra
- ❖ ICP Hardware
- ❖ ICP Hardware, Mass Detectors

DAY TWO:

- ❖ Basics of the HPLC Device & Its Applications
- ❖ Analysis of Sugars in Honey
- ❖ Optimization





- ❖ Statistics

DAY THREE:

- ❖ Interferences, Inter-Element and Isobaric
- ❖ Inter-Element Correction
- ❖ Hyphenated Techniques, HPLC-ICP, ETV-ICP-MS
- ❖ Applications

DAY FOUR:

- ❖ Applications (cont'd)
 - Food Analysis
- ❖ Practical Work

DAY FIVE:

- ❖ Practical Work (cont'd)
- ❖ Trouble Shooting
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.





Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

