Bringing Scientific & Technical Resources to the African Continent

Chrom Africa Instrumentation Services Limited
Buruburu Business Complex Suite No.26, Mumias South Road, Nairobi. P.O Box 4963-00100, Nairobi, Kenya.

ICP- OES/MS BEST PRACTICES IN METHOD DEVELOPMENT/OPERATION & TROUBLE SHOOTING 13th – 17th MAY 2024

Course Overview:
A comprehensive 5 days' course designed to increase expertise and optimize results for all users of ICP-MS. Understanding sample introduction and optimization of instrument performance are important subject areas within this 5 days' course. Interactive Training sessions and tutorial exercises are used to reinforce key learning points.

Who is this course for? The training program is valuable for those who have an interest to make their career in industries which are related to metals, trace metals analysis, motor oil, mineral processing, food products and several others.

Previous knowledge: Background knowledge of ICP-OES or Mass Spectrometry may be useful but not necessary, as all the essentials are covered in the course. Previous experience using ICP-MS equipment can be beneficial.

What you will learn: How the ICP source fragments in a different way to other MS techniques, offering a complementary view of the chemicals being analyzed

1. Why ICP-MS is particularly suitable for isotope ratio studies
2. How ICP-MS can be used for the analysis of ultra-trace metal elements (0.0005-100ppb)
3. Application of ICP – MS to non-metallic elements (e.g. S,P)

Please Note: The certificate will be provided only after clearing a test, we also conduct customized training programs on requests.

DAY 1	EVENTS
09.00-10.00	• Registration and Climate setting
10.00-10.30	***Tea Break***
11.00-12.30	• Introduction to fundamentals and applications of ICP-OES/MS, software familiarization and description of instrument.
12.30-14.00	***Lunch Break***
14.00 -16.30	• Laboratory session: Learning components of ICP, i.e. torch, detector, cones, spray chamber, nebulizer, tubing.
DAY 2	
9.00-10.30	• Assembling the sample introduction system. • ICP gas requirements.
10.30-11.00	***Tea Break***
11.00-12.30	Introduction: • Principles of spectroscopy • Principles & operation of ICP-MS • Components of sample introduction, sample handling, preparation, measurement system hardware overview
12.30-14.00	***Lunch Break***
14.00-16.30	Sample preparation techniques • Wet digestion • Dry ashing Fusion

DAY 3	
9.00-10.30	Laboratory session • Preparation of organic sample • Preparation of inorganic samples • Preparation of difficult samples
10.30-11.00	***Tea Break***
11.00-12.30	• Microwave assisted digestion • Software basic and instrument set-up
12.30-14.00	***Lunch Break***
14.00-15.30	Calibration methods • Internal standard • Standard addition • Calibration curve Laboratory session • Preparation of standards • Preparation of QCs • Method development
DAY 4	
9.00-10.30	Use of quality controls • Internal QCs – spiking, HRM, replicate testing External QCs – CRM, PTs, ILC
10.30-11.00	***Tea Break***
11.00-12.30	• Overview of System hardware, system setup and operation, detection limit determination, system optimization and background correction.
12.30-14.00	***Lunch Break***
14.00-15.30	ICP interferences • Matrix interferences, Spectral interferences, Internal Standards, analysis protocols and consideration, sample analysis using methods of standard additions
DAY 5	.
9.00-10.30	• Calculation and reporting data, conclusion and generating discussion
10.30-11.00	***Tea Break***
11.00-12.30	• Uncertainty measurements calculations • Trouble shooting and maintenance Instrument tuning • Discussion of the results
Lunch Break	***12.30-14.00***
14.00 – 15.00	• Directors speech and issue of certificates

DATES	COST	VENUE
13th – 17th May 2024 **Deadline 2nd May 2024**	**Cost Kes. 92,800.00 or USD 928.00**	**NAIROBI**