

Liquid chromatography: method development; instrument operation, maintenance, and troubleshooting

Supporting sustainable agricultural practices, ecosystem health and exports through accurate measurement.

Liquid chromatography (LC) is becoming an increasingly popular separation method in organic analysis. New generation synthetic compounds, including many pesticides and pharmaceuticals are larger, less volatile, and more polar, making LC the preferred separation technique. Additionally, a large variety of detectors can be used in combination with LC separation.

Therefore, LC is a highly versatile technique that can be applied in a multitude of fields. This versatility, in part, can be attributed to the variety of column phases, dimensions, physical attributes such as pore size and dimensions. After the selection of a column separation can further be influenced by the mobile phase. This includes solvent strengths, pH and the use of buffers and modifiers. The number of choices during method development can be very daunting to analysts.

The aim of this course is to provide analysts with tools to improve the separation, identification, and quantitation of compounds of interest by liquid chromatography.

**Limited space available,
maximum of twenty
participants - register now!**

JOIN OUR LIQUID CHROMATOGRAPHY JOURNEY

**How to ensure the quality of
your analysis.**

**15 - 26 May 2023
23 October - 3 November 2023**

**An informative workshop
aimed at LC analysts from
beginners to advanced users -
we will have something for you.**



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Visit www.nmisa.org or contact us on +27 12 947 2780 for more information.

**Excellence through measurement
Opening the doors to Africa and beyond**

WEEK 1 - WHAT IS THAT PEAK? FUNDAMENTALS OF LC

DAY 1:	DAY 2:	DAY 3:	DAY 4:	DAY 5:
<ul style="list-style-type: none"> • Registration and coffee • Welcome and logistics • The HPLC/UHPLC instrument • Coffee • The HPLC/UHPLC instrument continued • Lunch • Theory of chromatography - Understanding separation • Questions and discussion 	<ul style="list-style-type: none"> • Morning coffee • Theory of chromatography - Understanding separation continued • Coffee • Common forms of HPLC and column selection continued • Lunch • Common forms of HPLC and column selection continued • Questions and discussion 	<ul style="list-style-type: none"> • Morning coffee • Mobile phase considerations • Troubleshooting • Coffee • Troubleshooting continued • Lunch • The MS in LC-MS • Questions and discussion 	<ul style="list-style-type: none"> • Morning coffee • Mass analysers • Coffee • Understanding LC-MS data and MS/MS experiments • Lunch • Understanding LC-MS data and MS/MS experiments continued • Questions and discussions 	<ul style="list-style-type: none"> • Morning coffee • Practical method development • Coffee • Lab tours • Lunch • Theoretical close out and discussion • Logistics for week 2



Finding a course that is right for you

The NMISA Training Centre is committed to building measurement capacity in Africa. The centre has a number of courses that may meet your training needs, from personnel at the beginning of their careers to those wanting to develop advanced skills. Please visit our website www.nmisa.org for more information or contact us at training@nmisa.org or call +27 12 947 2461.

We are with you every step of the way

- The NMISA provides an extensive suit of products and services to meet your laboratories needs. This includes but is not limited to consultation services that spans the entire lifetime of your laboratory from design to implementation.
- Training in method development; validation and uncertainty.
- Providing calibration, proficiency testing and reference materials to assist your laboratory in meeting quality control and assurance objectives.



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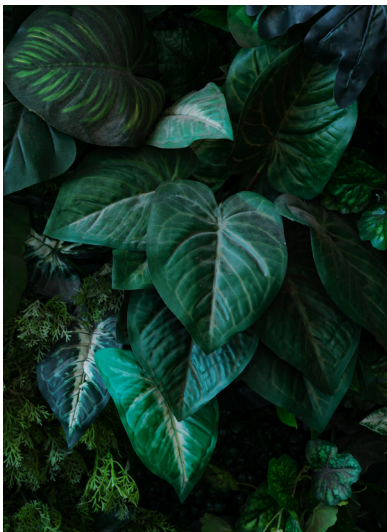
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WEEK 2 - LIQUID CHROMATOGRAPHY IN PRACTICE

DAY 1: Getting things ready	DAY 2: What will we see?	DAY 3: Where is my peak?	DAY 4: Where to from here?	DAY 5: Where did my peak go?
<ul style="list-style-type: none"> • Setting up the inlet • Column set-up and column care consideration • Column conditioning; flushing and storage 	<ul style="list-style-type: none"> • Setting up the detector • Inlet and detector quality control and how to interpret the data 	<ul style="list-style-type: none"> • Instrumental and method specification <ul style="list-style-type: none"> ○ Limit of linearity ○ Limit of detection ○ Limit of quantification ○ Reproducibility 	<ul style="list-style-type: none"> • Troubleshooting <ul style="list-style-type: none"> ○ Baseline ○ High system pressure ○ Ghost peaks 	<ul style="list-style-type: none"> • Troubleshooting <ul style="list-style-type: none"> ○ Changes in peaks including peak shapes ○ Retention time ○ Selectivity changes



Finding Proficiency Tests that suit your needs

The NMISA is an ISO/IEC 17043 accredited proficiency testing service provider with accreditation in the following fields: Food Testing (chemical additives, residues, and nutritional content); Water Testing (Chemical contaminants and residues) and Forensic Testing (forensic level alcohol, forensic preservatives and breath alcohol).

We are with you every step of the way

To support your measurement quality control and quality assurance objectives, the NMISA has released several reference materials and certified reference materials. These materials where possible originate from within the African Continent, to ensure compatibility with the samples routinely measured in your laboratory. Reference materials currently available include mycotoxins (analytical standards as well as naturally incurred materials such as maize flour and peanut slurry), forensic blood alcohol analysis analytical standards, matrix materials for nutritional content, nutritional and toxic elements as well as pesticides.

Please visit our on-line store for available products and pricing www.store.nmisa.org



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