

SC-4939 Optimizing Performance and Maximizing Productivity When Measuring Heavy Metals in Cannabis and Hemp by ICP-MS

PittCon Half Day Short Course presented by Robert Thomas, Scientific Solutions, supported by experts from Shimadzu Scientific, CEM Corp, Glass Expansion, and Spex Certiprep

Monday March 3, 1.00-5.00 pm, 2025, Boston Convention and Exhibition Center

Overview

Heavy metal measurement is a critical component of assessing the safety of today's cannabis and hemp consumer products. It is well recognized that there are many sources of potential elemental contaminants throughout the entire cultivation, extraction, production, storage and delivery process. Because of its unparalleled multielement detection capability and sample throughput, ICP-MS has become the dominant trace element technique for the measurement of heavy metals in the wide array of commercially available products, including dried flower, extracts, oils, topicals, tinctures, food-based and inhalation products. However, each category requires vastly different analytical strategies in preparation, digestion, dilution and presentation of the sample for analysis by ICP-MS. In addition, as more and more states/jurisdictions begin to expand the elemental panel beyond the big four heavy metals (Pb, Cd, As, Hg), the required operator skills become even more important to understand environmental contamination issues, acid digestion procedures and interference removal techniques to ensure high accuracy and precision is achieved.

The short course will present strategies on ways to minimize sources of contamination, optimize interference removal, reduce measurement errors and improve sample throughput when measuring heavy metal contaminants in cannabis and hemp using inductively coupled plasma mass spectrometry (ICP-MS). It is intended not only for novice users of ICP-MS working in the cannabis testing industry, but also for experienced operators who are interested in getting a better understanding of using advanced techniques when a wider panel of analytes are required by federal regulators sometime in the future. The session will be presented by five experts who have decades of experience in carrying out the analysis of trace elements by ICP-MS and in particular fine-tuning the analytical procedure for the analysis of cannabis and cannabinoid consumer products.

Registration Information:

<https://pittcon.org/conference/short-courses/>

Recommended Short Course Reading:

<https://www.routledge.com/Measuring-Heavy-Metal-Contaminants-in-Cannabis-and-Hemp/Thomas/p/book/9780367417376#>

SC-4940: How to Select an ICP-MS: The Most Important Analytical Considerations

PittCon Half Day Short Course presented by Robert Thomas, Scientific Solutions,

Tuesday, March 4, 8.30 am-12.30 pm, 2025, Boston Convention and Exhibition Center

Overview

The aim of the course is to provide a basic understanding of the most important selection criteria for practitioners in the trace metal analysis community who are looking to purchase a new ICP-MS system - and in particular what instrument features impact performance and how best to evaluate them.

The course will focus on the most common analytical objectives when carrying out trace metal analysis and how they impact the evaluation of commercial ICP-MS (Inductively Coupled Plasma Mass Spectrometry) systems. This will be followed by a discussion about the most important selection criteria and the many decisions that need to be made in order to compare different commercial approaches. The majority of the course will be devoted to a technical discussion on the strengths and weaknesses of different designs, including an in-depth look at collision/reaction cell technology, and how they impact the analysis of real-world samples. In addition, some non-technical considerations, like reliability, usability, routine maintenance and cost of ownership, will be presented.

Registration Information

<https://pittcon.org/conference/short-courses/>

Short Course Recommended Reading

<https://www.routledge.com/Practical-Guide-to-ICP-MS-and-Other-Atomic-Spectroscopy-Techniques-A-Tutorial/Thomas/p/book/9781032035024#>