



UCSD Battery Boot Camp Program Agilent Full Day Seminar

July 30th 2025, 9:00 AM PST CMRR Auditorium

9:30-10:15 Welcome and Introductions

Steve Wall – Atomic Spectroscopy Product Specialist
Partnering with the battery industry for successful outcomes and insights: an overview of Agilent analytical capabilities and solutions.

10:15-11:15

Unlocking the Power of Elemental Analysis in the Battery Industry using ICP-OES

Steve Wall – Atomic Spectroscopy Product Specialist
In this session we'll begin with an overview of atomic spectroscopy techniques, then dive deeper into the operation of ICP-OES (Inductively Coupled Plasma Optical Emission Spectroscopy). We'll explore the role of ICP-OES in applications including lithium extraction and the analysis of cathode and anode materials while highlighting how precise elemental insights are driving innovation in battery technology.

11:30-12:30

Analysis of Elemental Impurities in Lithium Ion Batteries

Emmett Soffey – Atomic Spectroscopy Product Specialist

To enhance battery performance, manufacturers are interested in measuring a wide range of contaminants. Many of these contaminants are present at concentration levels lower than that which can be measured by ICP-OES. Researchers are therefore turning to ICP-MS in order to achieve these lower detection limit requirements.







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Improving Battery Production Yield, Performance, and Stability Using FTIR Spectroscopy

Yanqia (Cha) Wang — Molecular Spectroscopy Application Engineer
Molecular spectroscopy, including FTIR and UV-Vis techniques, plays a critical role
across the lithium-ion battery (LIB) value chain by enabling precise identification and
characterization of materials. It supports improved production yield, battery stability,
and safety by allowing rapid quality control of raw materials, electrolyte components,
and separators. These non-destructive techniques ensure consistency, detect
degradation products, and facilitate research and development of next-generation LIBs.

14:15-15:00

GC and GCMS Solutions for the Lithium-Ion Battery Industry

Simon Jones – Gas Chromatography Application Engineer In this presentation we will discuss GC and GCMS testing solutions from the electrolyte formulation, safety monitoring, as well as recycling.

15:15-16:15

LC/MS Applications in Lithium-Ion Battery Industry

Rama Tummala – Mass Spec Product Specialist
Lithium-ion Battery manufacturers implement LC-MS analysis in R&D, routine quality
control analysis, and close monitoring of electrolyte degradation studies over battery
aging. This talk will focus on targeted and non-targeted LC-MS approaches for analysis
of non-volatile organic components in electrolytes.

