

Invitation to an Online Stakeholder Workshop

International Comparability of Alkali Metal Ion Battery Measurements

23 & 24 September 2025, 12:00 – 14:00 (CEST)

The aim of the workshop is to establish if there is a need to improve the international comparability of measurements of alkali metal ion battery materials, cells and systems, and how to best prioritise activities and capability development across the metrology community. The event is targeted at the wider battery community, including representatives from industry, academia, metrology institutions and research establishments. The workshop will include:

- Brief pitch presentations by National Metrology Institutes on measurements such as state-of-health, electrochemical impedance, electrical resistance, leakage resistance, material composition of new and recycled cells, chemical mass fraction, and thermal parameters.
- An introduction to the VAMAS project “*Key Metrological Parameters for Lithium-ion Cell Standardization*”, including presentation of the available results.
- An opportunity for stakeholders to present on issues related to harmonizing measurements.
- An interactive discussion on obstacles and solutions for achieving comparability of measurements.

A key challenge in measurement is ensuring the equivalence of results at an international level. To address this, the International Committee for Weights and Measures (CIPM) has set up a framework for international comparison measurements among National Metrology Institutes (NMIs), and a database of their capabilities, supporting this Mutual Recognition Arrangement (CIPM-MRA). However, key parameters related to alkali-metal batteries such as state-of-health, material composition and thermal parameters are not covered in this framework.

A *Task Group on Metrology for Li-ion batteries* has therefore been established by the CIPM Consultative Committee of the Amount of Substance to address this gap. Additionally, the ‘Versailles Project on Advanced Materials and Standards’ (VAMAS), TWA 0 Project T5, is investigating the equivalence of measurements for selected Li-ion battery parameters, complementing the Task Group's scope. The project will distribute cells to laboratories worldwide with a detailed protocol, aiming to specify key parameters and measurement procedures, and assess reproducibility.



Both initiatives aim to enhance the international comparability of measurements for alkali metal-ion batteries. A key output from the workshop will therefore be a set of recommendations to support the development of a roadmap and strategy for CIPM's future activities in this sector.

Free Registration link

You may register here by 23.09.2025 : <https://conferences.ptb.de/event/13/>

After registration, you will receive a link for participation.

Contact: steffen.seitz@ptb.de

Agenda

Tuesday, 23 September, 12:00-14:00 (CEST)

Introduction to the CCQM Task Group on Li-ion batteries in the context of CIPM-MRA (10 Minutes)
Steffen Seitz (PTB), Chair of the Working Group on Electrochemical Analysis at the CCQM

Results of the VAMAS project “Key Metrological Parameters for Lithium-ion Cell Standardization” (10+5)
Anita Schmidt (BAM), Project Coordinator

Pitch presentations on **Cell and System Measurements** (5 min each at max),
Accompanied by a parallel online survey, including the opportunity to post questions and comments

- SOH/SOC (PTB, BAM)
- Impedance (CMI)
- Leakage current (Keysight)
- Stakeholder 1
- Stakeholder 2

Discussion, starting from the online feedback of the audience.

Wrap up of the presentations, discussions, survey outcomes to steer future actions.

Wednesday, 24 September, 12:00-14:00 (CEST)

Recap of the Introductions from Day 1
Steffen Seitz and Anita Schmidt

Pitch presentations on **measurements of Cell Components** (5 min each),
Accompanied by a parallel online survey, including the opportunity to post questions and comments

- Water content (NIM-China)
- Material characterization (LNE, PTB, NPL)
- Electrical Resistance Tomography (INRiM)
- Stakeholder 3
- Stakeholder 4

Discussion, starting from the online feedback of the audience.

Wrap up of the presentations, discussions, survey outcomes to steer future actions.