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Newsletter #2 - Join Us at the European Workshop on Battery Interfaces!

Dear Reader,

Do not miss a must-attend event of 2025 **“European Workshop on Battery Interfaces: High-Resolution Techniques and Multiscale Modelling”**.

The multiple physical and chemical processes occurring at the electrode-electrolyte interfaces are instrumental to the performance and lifetime of rechargeable batteries.

This workshop aims to bring together high-resolution experimental techniques and multiscale modelling methods to probe multi-physics interactions and electrochemical reactions at the battery interfaces.

We welcome contributions with a focus on developing or using high spatial and/or temporal resolution characterization techniques to study different types of complex physical phenomena, such as operando and in-situ methods (e.g., TEM, XRD imaging, PEEM, HAXPES, SIMS imaging, X-ray tomography, SPM, IBA) for probing dynamic physical processes, interfacial chemistry, and tracking morphological changes. Combining advanced characterisation with multi-scale theory and computational modelling from atomistic to continuum scale, will provide fundamental understandings and potential innovative solutions, to push the development of emerging battery technologies.

European Workshop on Battery Interfaces
**High-Resolution Techniques and
Multiscale Modelling.**

3rd & 4th April 2025. Córdoba, Spain.



Registration: by 3rd March 2025

Registration form

Project News

The OPINCHARGE Project celebrated 18 months of research and innovations

The OPINCHARGE Project held its project general meeting from November 21 to 22, 2024, hosted by Center for Ageing, Reliability and Lifetime Prediction of Electrochemical and Power Electronic Systems (CARL) in Aachen, Germany. This pivotal event united leading research institutions, experts in the field of battery technology and business consulting organisations to:

- review progress
- share insights
- plan future advancements and shape the future of energy storage.

Presentations from the Center for Ageing, Reliability and Lifetime Prediction of Electrochemical and Power Electronic Systems (CARL) and their partners highlighted significant work, achievements and opportunities in sustainable battery research world.



Lab Tour: visit to CARL's facilities

An insightful visit to CARL's facilities showcased work of advanced tools, including electron microscopes, computer tomographs, X-ray, and mass spectrometers, enabling the analysis of electronics and batteries from nanoscale particles to systems weighing hundreds of kilograms. The lab offers over 5,000 test circuits for cycling battery cells. They can test up to 100 V and 1500 A with one "testing device" and up to 1000 V with the large pack tester with a power of up to 240 kW. All test and analysis data are recorded in robust databases, enabling advanced analysis and correlations using artificial intelligence and machine learning.



[Check out the article](#)

Open Access Research Articles

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L_{anode} $L_{\text{separator}}$ L_{cathode}

Discharge

Charge

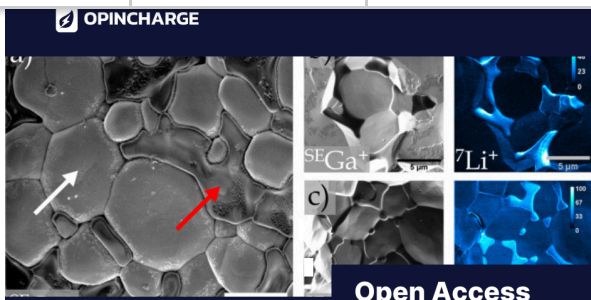
**Open Access
Research Article**

Cutting-edge materials
to improve PERFORMANCE AND EFFICIENCY OF BATTERIES

Cutting-edge materials to improve performance and efficiency of batteries

Learn more about Full Cell Modeling and the future of Lithium-Ion Batteries. Check out our Open Access Research Article...

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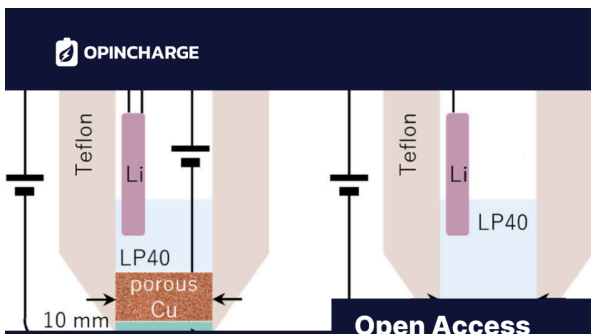
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Investigation of Li accumulations in LLZO based solid state batteries via operando neutron imaging and ex-situ correlative structural and chemical analysis

Open Access Research Article

Investigation of Li accumulations in LLZO based solid state batteries

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Electrochemical Removal of HF from Carbonate-based LiPF₆-containing Li-ion Battery Electrolytes

Open Access Research Article

Electrochemical Removal of HF from Carbonate-based LiPF₆-containing Li-ion Battery Electrolytes

Due to the hydrolytic instability of LiPF₆ in carbonate-based solvents, HF is a typical...

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Advanced methods for characterizing battery interfaces: Towards a comprehensive understanding of interfacial evolution in modern batteries

Open Access Research Article

Advanced methods for characterizing battery interfaces

Batteries are complex systems operating far from equilibrium, relying on intricate reactions at interfaces for performance...

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Download our digital leaflet to explore OPINCHARGE's key goals, insights, and innovations in battery technology. Keep it handy for a quick, comprehensive overview.

[Download](#)

Our Network

Battery 2030+

The ambition of the Battery 2030+ is to make Europe a world-leader in the development and production of the batteries of the future. These batteries need to store more energy, have a longer life, and be safer and more environmentally friendly than today's batteries in order to facilitate the transition to a more climate-neutral society. The project is led by Uppsala University, started on 1st of September 2020.

[Read more](#)

BEPA

BEPA (Batteries European Partnership Association) is the private side association of the Batteries European Partnership under Horizon Europe.

We gather more than 140 stakeholders of the European battery community who strive towards a competitive European industrial battery value chain for stationary applications and e-mobility.



[Read more](#)

OPINCHARGE - Reinventing The Way We Invent Batteries!



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