



BATSIS

Battery Testing Simulation Solutions

In a nutshell

**VIRTUAL TESTING &
SIMULATION**

**DIGITAL DESIGN &
LIFETIME
EVALUATION**

**MULTI-DOMAIN
MODELING**

**FLEXIBLE &
SCALABLE**

Enabling Digital Battery Development Across Use Cases

Electrical storage systems are becoming the key component in energy transformation. Technology in this field is evolving rapidly, and future OEM success strongly relies not only in the design of disruptive concepts, but also on the ability to cope with faster development times.

BATSIS is a modular platform for battery virtual testing and simulation, supporting both mobile and stationary applications. It facilitates early-stage conceptual design, and use-case specific model development and parametrization, using diverse electrochemical, electrothermal and aging approaches. Thanks to a flexible and performant toolchain, detailed short- and long-term lifetime scenarios can be efficiently assessed. BATSIS enables both physical and data-driven development, from component-level evaluation to full system integration and optimization.

BATSIS is your gateway to unlocking the full potential of virtual battery development for a wide range of applications and use-cases - accelerating time-to-insight while reducing test effort, development time and cost.

KEY ADVANTAGES

- Modular simulation toolchain supporting electrochemical, electrical, thermal and aging behavior
- Parameter libraries for key cell chemistries (e.g. NMC, LFP, NCA, Na+)
- Flexible integration of models for degradation and aging
- Efficient lifetime simulation and system-level co-simulation
- Model order reduction and PINN-based surrogate modeling
- FMU export for external simulation environments (e.g. DYNAMIS coupling)
- Public dataset integration and custom data handling
- Scalable from early evaluation to operational validation

USE CASES

- Virtual testing of battery concepts in automotive and energy systems
- Integration of battery aging models for lifetime prediction
- Evaluation of thermal performance and safety under varying loads
- Comparison of cell technologies during concept development
- System-level optimization using digital twins
- Co-simulation of battery behavior within complete vehicle environments
- Acceleration of parametrization workflows via automated fitting routine

CONTACT

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