HUBA
Battery Diagnostics Container Lab

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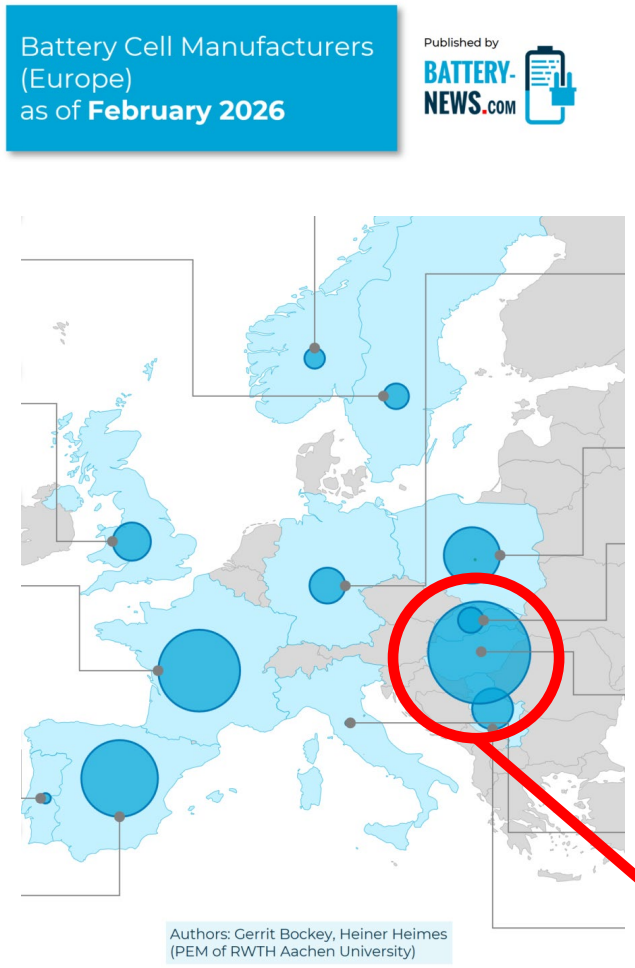
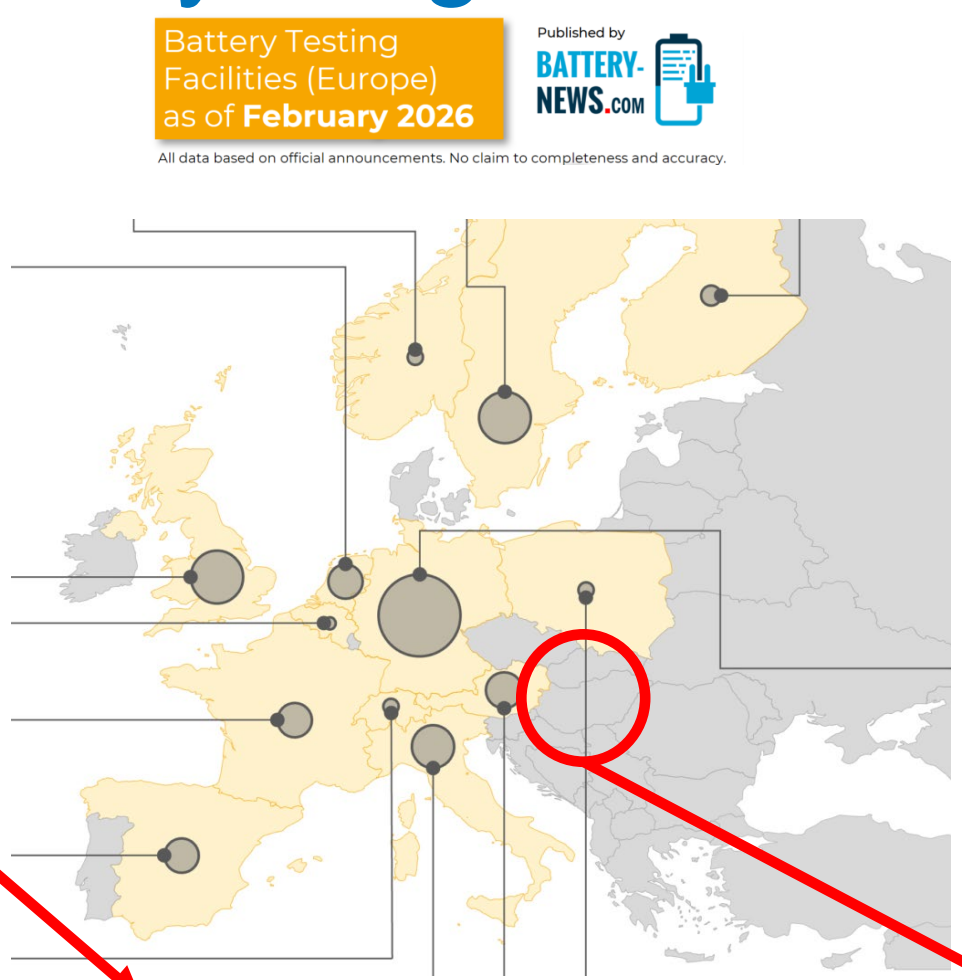
SZÉCHENYI EGYETEM UNIVERSITY OF GYŐR

HUBA Battery Diagnostics Container Lab







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Outstanding cell-manufacturing

Testing and second-life capabilities need to be strengthened

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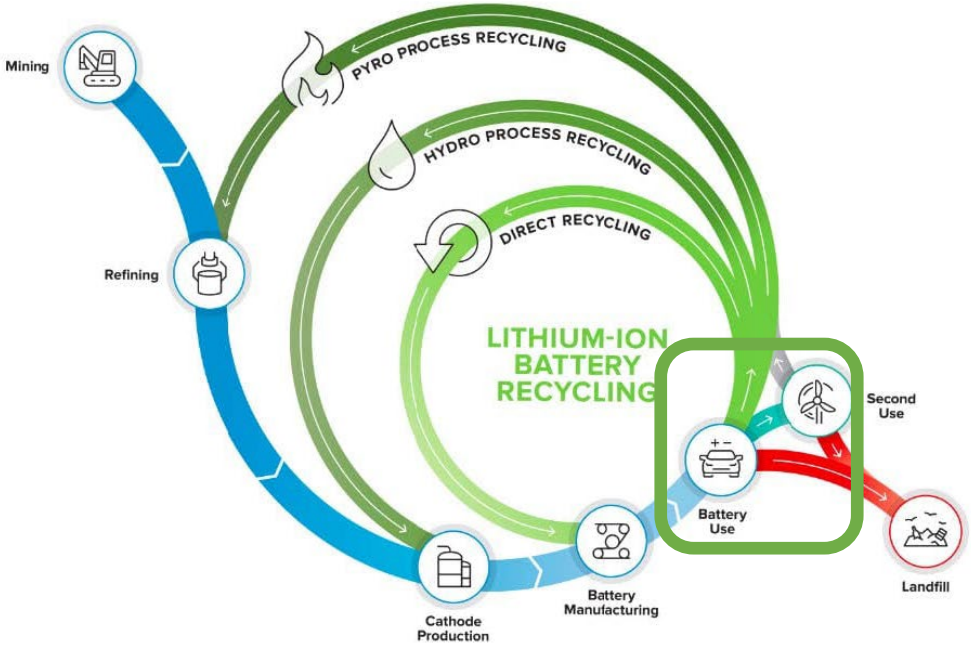
Developing competencies in circular resource management









Disassembly

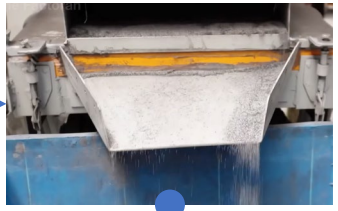


Long-term goal: second-life applications



Development of classification methods





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One-year joint testing programme

Background and goals:

Container-lab

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Location

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Smart Vision

Battery Test System

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Planned activities: battery module testing, measurement data collection, development of predictive algorithms

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Opening Ceremony – 28th of October, 2026













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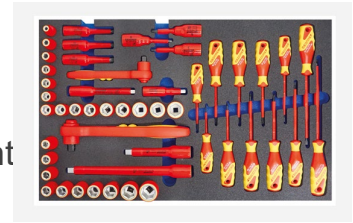
Safety measures

- General safety
  - Electrical safety inspection
  - Lightning protection assessment
  - Fire safety documentation



- Personnel protection
  - Personal protective equipment (PPE)
  - Insulated tools and measuring instrument
  - First aid kit











- Fire protection
  - Portable fire extinguishers and a fire blanket
  - Equipment for isolating battery modules
  - Fire-resistant insulation inside the container





- Additional safety features provided by the test system
  - Automated test procedures based on measurement parameters
    - Operating parameters within manufacturer specifications
    - Software continuously monitoring every module's parameters, including cell voltages and temperatures
  - No destructive or overload testing
  - Robust test cabinet
  - Tests that can be started, monitored and stopped remotely online



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Smart Vision Battery Test System

- Technical Specifications
  - Grid connection power: n × 20 kW
  - Number of test channels: n × 4
  - Power per channel: 4 kW
  - Up to 4 channels can be connected in parallel
- Base Configuration
  - 20 kW grid connection power
  - 12 test channels
- Potential Applications
  - Used battery classification
  - Prototype validation
  - Reverse engineering tests
  - EoL discharge
- Available Measurements
  - Standard measurements
    - Capacity
    - Internal resistance
    - Leakage current
    - Remaining useful life estimation
  - Predictive measurements: AI-based remaining useful life estimation
  - EoL discharge

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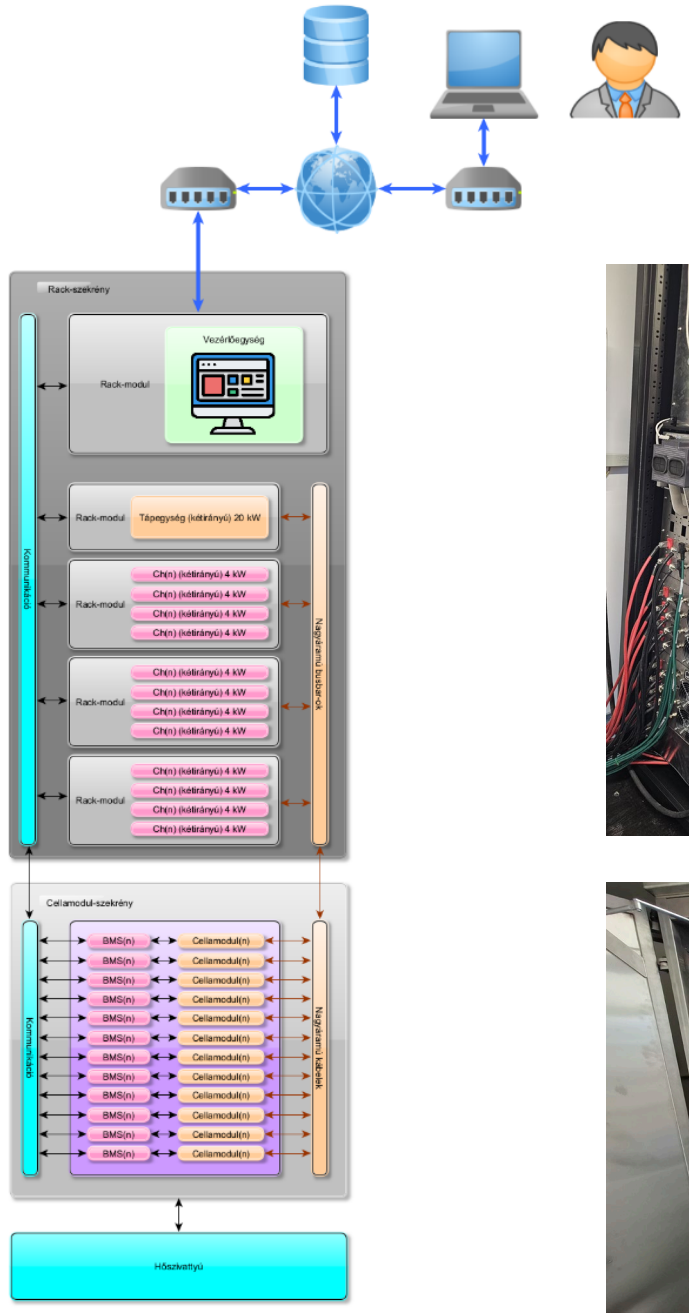



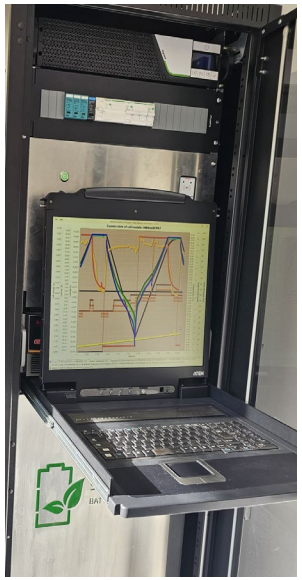



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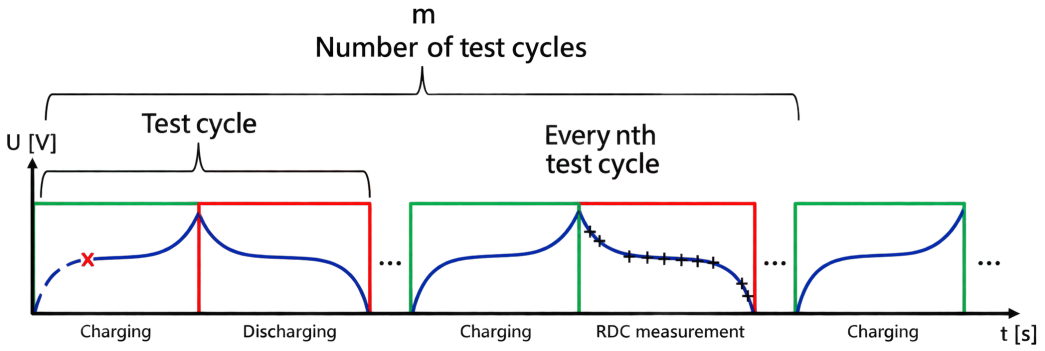
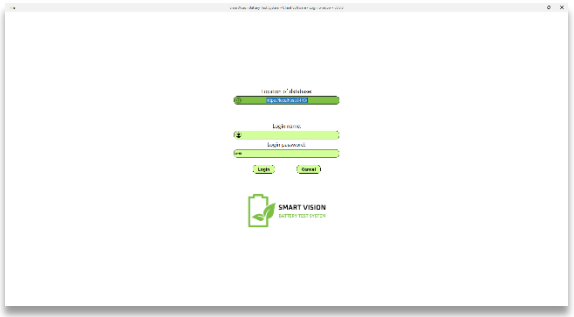
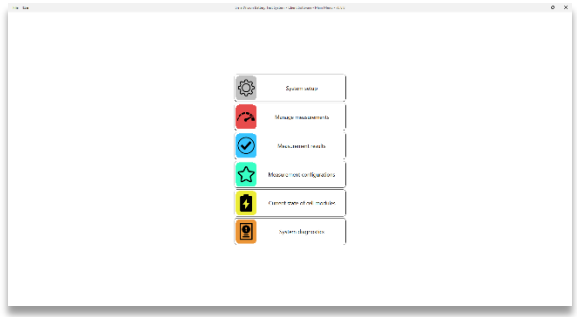
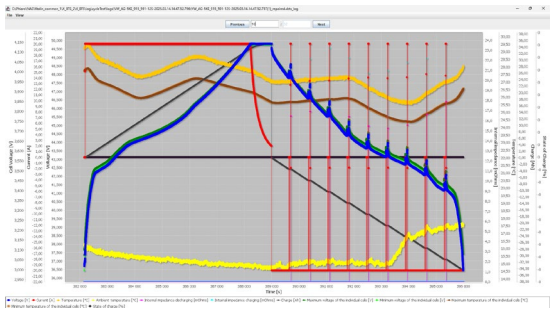
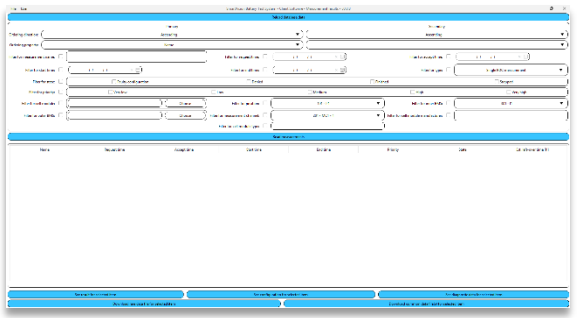
Smart Vision Battery Test System

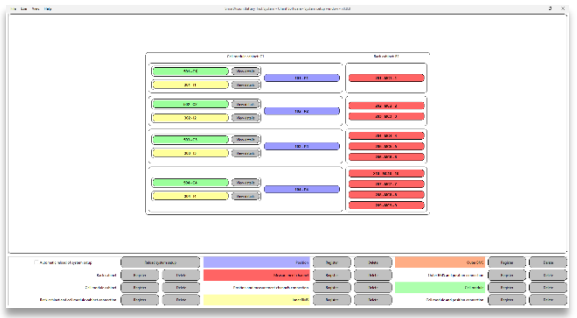


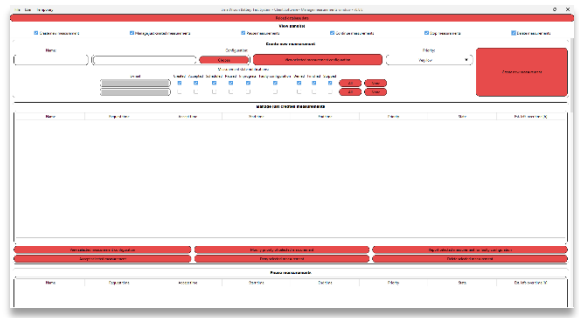












SMART VISION
BATTERY TEST SYSTEM

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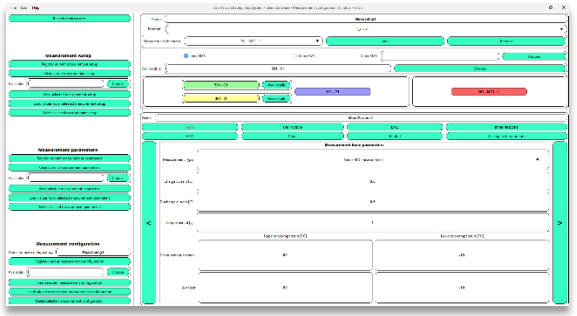

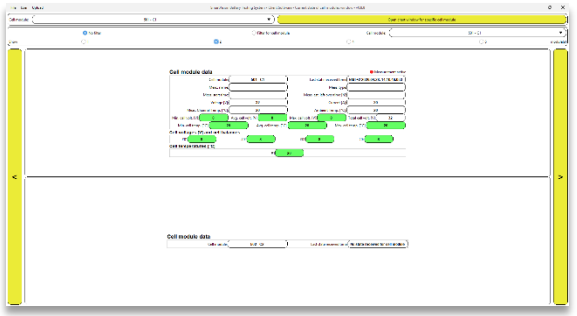

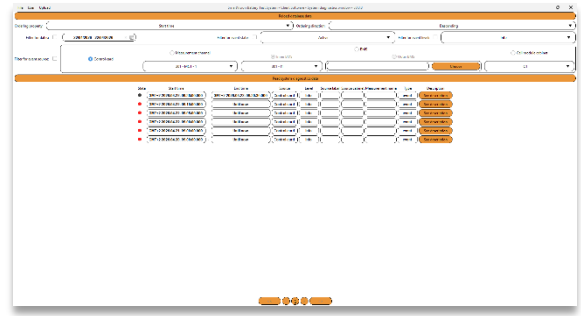

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- We thank our supporters for helping us establish the container laboratory!
- We also thank ALTEO Circular Ltd. and Vision SMT Ltd. for their cooperation!



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