Accelerated ageing tests (T18)

Accelerated degradation cell test: long-term cycling experiments are time-consuming, so it is essential to design new tests to accelerate the degradation of materials.
VITO/EnergyVille has extensive experience in evaluating products objectively, according to external standards. The VITO/EnergyVille lab functions according to the international quality, environment and safety standards: ISO 9001, ISO 14001 and OHSAS 18001.

2 PEC SBT8050 battery testers (36kW)
- 24 channels in total
  - maximum voltage: 80V per channel
  - maximum current: 600A, max. 12 channels of 50A each

2 PEC SBT0550 cell testers (6kW)
- 48 channels in total
  - maximum voltage: 5V per channel
  - maximum current: 600A, max 12 channels of 50A each

1 PEC ACT0550 cell tester (16kW)
- 40 channels in total
- Maximum voltage: 5V per channel
- Maximum current: 250A, max. 5 channels of 50A each

Triphase 75kW inverter
- maximum voltage: 700V
- maximum current: 160A nominal, 200A peak

Triphase 30kW inverter
- maximum voltage: 700V
- maximum current: 96A nominal, 144A peak

1 VMP3 from Biologic with 8 independent potentiostat/galvanostat channels including
electrochemical impedance spectroscopy (EIS) measurement.
- current ranging from 10 µA up to 5A with a resolution of 0.0033% of FSR
- voltage ranging from 0 to 10V with a resolution of 0.0033% of FSR
- frequency range 1 MHz to 10 µHz (accuracy: 1%, 1°)
- amplitude potentio: 1 mVpp to 1 Vpp
- galvano: 0.1% to 50% of the current range

Climate chambers: -20°C – +50°C

R&D Status: Advanced

Accelerated ageing tests

What can we characterize : cells

Experimental time: some months

Advantage: a way to observe cell ageing behaviour relatively quickly.
Mathematical techniques to understand the ageing
Influence of user profiles on battery ageing can be derived afterwards.

Drawback: Quite some cells (20 as very minimum, 50 as maximum) are needed to cover ageing tests

R&D Status: Advanced