DYNAMIS

SMART POWER SOLUTIONS

- **A large Variety of Tests for Cells and Batteries**

- **Transportation safety according to UN 38.3**

- **Safety requirement for use according to IEC 62133-2**

- **Long term/short term cycle tests** to check performances and service life in combination with defined environmental conditions.

- **Combinations** of mechanical tests, simulations of specific environmental conditions and electrical tests upon customers' requests.

Test Equipment

Measurement circuits for single cells to 5V (0.1mA - 500A), for batteries to 30V (20A), 15V (50A) and 80V (50A), as well as single cell voltage and temperature monitoring.

DYNAMIS Batterien GmbH
is a manufacturer of batteries and accu packs, located in Dettingen near Konstanz. In our ESD-protected facility we produce standard primary and secondary packs as well as custom design solutions for special requirements.

For a variety of chemical systems, e.g. NiMH, Li Ion as NMC or Iron Phosphate, as well as Li Polymer. DYNAMIS can support you from project start to successful series implementation, ensuring uninterrupted service for optimisations and running productions.

As a supplier of complete solutions we offer comprehensive development of hard- and software for battery management systems, including custom design solutions.

Test and Measurement procedures have been available from our **DYNAMIS Test Laboratory**, qualifying DYNAMIS products as well as others on customers' request.

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DYNAMIS Test Laboratory

for Lithium and other Battery Technologies

Various electrical and mechanical tests and measurements according to customers' requests.

For special applications, project-defined or according to standards like UN 38.3, or Safety requirements according to IEC 62133-2.

- **Low Pressure and Climate Tests**
  Simulation of low pressure conditions as well as tests for tightness / internal electric connections for batteries, performed at high rate temperature changes and large temperature differences.

  Example: Simulation of air pressure during air transport (11.6 kPa) according to UN 38.3; temperature changes from/to +72°C / -40°C during storage; stress tests up to 150°C; and more.

- **Shock Tests for Heavy Knocks**
  Simulation of possible knocks during transportation.

  Example: Shock test for batteries according to UN 38.3 with half-sine signals of 150 g_n force and a time width of 6 ms, sequentially performed as 18 shocks in 3 perpendicular axis of orientation.

- **Vibration Tests of Different Kinds**
  Simulation of vibrations during transportation or application operations under a variety of different conditions.

  Example: Vibration test according to UN 38.3 = 12 repetitions ea. of a sinusoidal frequency band, increasing from 7 to 200 Hz during 15 min, with acceleration of $1g_n$ to $8g_n$.

- **Free Fall Test according to IEC**
  Simulation of a free fall onto a defined surface using different orientations and angles.

  Example: Free fall according onto concrete from a height of 1.0 m, 3 x according to IEC 62133-2 requirement.

- **Short Circuit, Overcharge and Forced Discharge Tests**
  Testing of batteries' ability to withstand overcharge conditions, as well as the safety of primary or rechargeable cells during forced discharge conditions.

  Example: Short circuit simulation for cells with very low resistance performed at 57°C, overcharge with double recommended charging current for 24 hours forced discharge using an additional 12 V DC source.

- **Impact Test according to UN 38.3**
  Simulation of a defined impact using a massive weight onto a battery cell.

  Example: Impact by 9.1 kg onto a steel bar across a cell from a height of 0.61 m.