

Helping you to understand your battery in a novel way.

InnovationLab

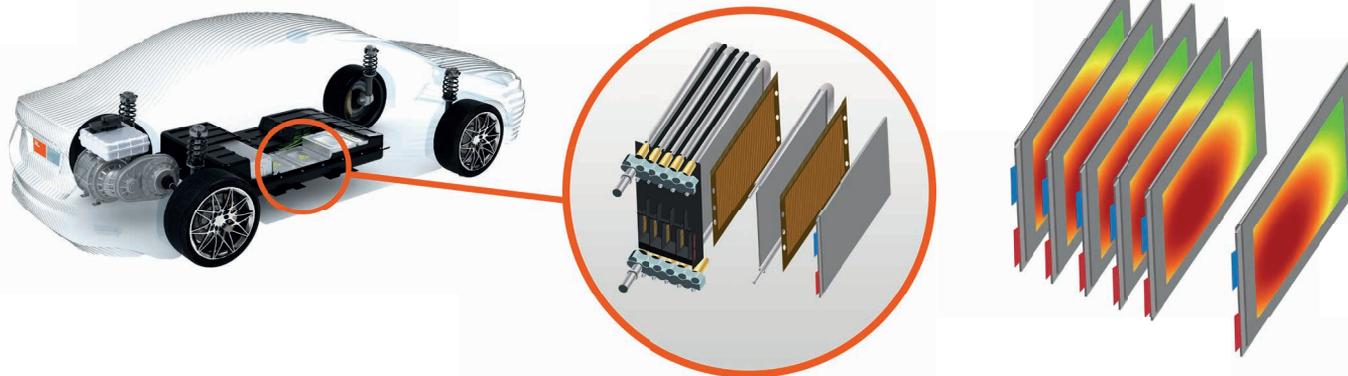
THE ONE-STOP SHOP FOR PRINTED ELECTRONICS

The battery is arguably the core of an electric vehicle. However, despite extensive research, not much is known about the way a battery system reacts to stress tests regarding changes in temperature and pressure. This is because data from the inside of a battery system is not easily accessible.

With our Battery Monitoring Solution (BaMoS), we offer an R&D system that helps you to better understand the behaviour of your battery. This knowledge can be used to introduce control measure to optimize the performance and improve cycle lifetime. For instance, based on the knowledge of the dynamic pressure distribution, **battery lifetime can be extended by up to 40%**.

How to Measure Inside a Battery System

Printed sensor foils provide a great way of gaining insight into battery systems. Being ultra-thin and flexible they fit in between individual battery cells. Thus, pressure and temperature can be resolved spatially and temporally and data can be collected easily. This cell-level insight into battery performance provides valuable information for subsequent improvement measures.



Your Benefits at a Glance

Our Battery Monitoring solution in your R&D test stands supports you to

- ✓ harvest spatially resolved live data on cell level
- ✓ adjust charge-discharge cycles
- ✓ make your battery research more effective
- ✓ drive the battery at the optimum conditions



Measurement is the first step that leads to control and eventually to improvement.

Secure your version now

APPROVED BY A GERMAN OEM

Product Specifications

Sensors:

- ▶ Matrices of force sensors
- ▶ Matrices of temperature sensors
- ▶ Combined matrices possible
- ▶ Both standard and customized layouts available
- ▶ Humidity measurement and heating on demand

Electronics*:

- ▶ State-of-the-art read-out electronics without crosstalk between pixels
- ▶ 12-bit resolution, for matrices with up to 32x65 pixels
- ▶ High read-out frequency and low noise
- ▶ Several communication interfaces (e.g. CAN-Bus)

*while stocks last

Software:

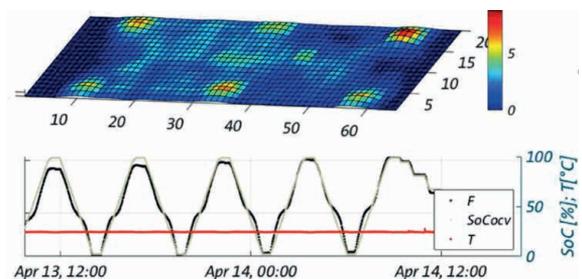
- ▶ Live visualization, storage and analysis of the data
- ▶ Real time streaming via API
- ▶ Calibration of sensor foils on demand



Example: Visualizing the “Breathing” of a Battery

As battery cells consistently expand and contract during the charge-discharge cycle, a pressure-sensitive foil can monitor this “breathing”. This allows to

- ✓ measure the state of charge (SoC) directly,
- ✓ implement preload and cell balancing measures,
- ✓ detect irregular behaviour,
- ✓ prevent overcharging,
- ✓ and gain information on state of health (SoH).



InnovationLab GmbH

Speyerer Straße 4, 69115 Heidelberg

info@innovationlab.de www.innovationlab.de

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