Energy storage research and development switzerland

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The Energy Storage Research Centre is active in numerous projects with partners from industry and other universities around the world and is part of a wide network.

The SIP Biel/Bienne, which is home to the Energy Storage Research Centre and other innovative companies, is the perfect partner for implementing research outcomes into practice. SIP Biel/Bienne is one of the five locations selected for the national Switzerland Innovation project.

Bern University of Applied Sciences’ engagement with the Swiss Competence Centers for Energy Research (SCCER) ‘Storage’, ‘Mobility’ and ‘Grids’ brings substantial benefits to the centre. This collaboration ensures access to key national and international research networks in energy storage and its applications, which is particularly advantageous for external partners of the Energy Storage Research Centre.

The Lithium-Ion Battery Competence Network (KLiB) counts among its members leading international industrial companies and practice-oriented research institutes. The competence network focuses on all topics relating to lithium-ion batteries. To facilitate knowledge transfer and cultivate international contacts, the Energy Storage Research Centre joined the KLiB in spring 2017.

The collaboration between the Institute of Dongguan at Sun Yat-sen University (SYSU) in China and the Energy Storage Research Centre focuses on co-developing a hardware-in-the-loop BMS tester, located at the BFH Centre. The BMS-HIL testing and development platform tackles the challenges most commonly encountered when designing a BMS for the automobile and energy storage industry. This collaboration offers insights into the demands placed on BMS technology at an industrial level.

The characterisation and modelling of electrochemical storage devices is key to their successful implementation. There"s also a need for complete battery and energy systems to be developed and tested. Among other things, this involves identifying the optimal parameters for integrating electrochemical storage technology into a wide range of applications. A variety of test and characterisation methods are also used.

Battery and energy management systems (BMS and EMS) ensure that electrical storage systems operate safely and correctly.

Our specialised researchers develop efficient, reliable software and hardware for these systems. To this end, they develop, test and validate model-based software algorithms and individual hardware for a wide range of

battery applications.

The efficient production of batteries is one of the key technologies required to achieve the objectives of the energy transition. Our production technology experts optimise the production process as well as developing more efficient and robust machines.

For this technology to establish itself, new methods must offer significantly improved production efficiency, with a finished battery cell rolling off the production line every 30 seconds. These production methods are a prerequisite for the mass production of top-quality batteries with high performance density.

We make our expertise available directly to the Swiss mechanical engineering industry and battery manufacturers for the set-up and optimisation of production plants.

Contact us for free full report

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