

Who is Swiss battery?

Our company SwissBattery.com develops battery products and materials for the electric automotive & airspace market. Our target is top benchmarking. We focused at an early stage of the product development on energy use and cost. Our products are resilient in increasingly regulated and clean emerging markets.

Why is lithium-ion battery production growing beyond consumer electronics?

The rise of intermittent renewable energy generation and vehicle electrification has created exponential growth in lithium-ion battery (LIB) production beyond consumer electronics.

Can recycling lithium-ion batteries improve environmental sustainability?

Nature Communications 16, Article number: 988 (2025) Cite this article Recycling lithium-ion batteries (LIBs) can supplement critical materials and improve the environmental sustainability of LIB supply chains.

What is Swiss battery used for?

The technology of Swiss Battery is suitable for a high-energy /high-power applications which can boost the range of electric airplanes. Electric aircraft are all sizes, from electric passenger airplane to all sizes of unmanned aerial vehicles (UAV) used for agricultural applications and defense.

What are Swiss battery engineers doing?

Swiss Battery engineers have secured multiple inventions that are substituting critical heavy-metals with tailor-made, renewable battery raw materials. Science is the basis of our discoveries and innovations.

How can mixed-stream lithium batteries reduce environmental impacts?

Converting mixed-stream LIBs into battery-grade materials reduces environmental impacts by at least 58%. Recycling batteries to mixed metal products instead of discrete salts further reduces environmental impacts.

Given the development in battery energy technologies and the diverse needs of the grid, multiple BESS technologies are likely to prevail, and the dominant position of lithium-ion should not be ...

With the ability to store and generate vast quantities of hydroelectric energy, the battery will play an important role in stabilising power supplies in Switzerland and Europe. What is a water ...

Switzerland is taking part in the European research initiative Battery 2030, which aims to improve the longevity and energy density of conventional lithium-ion ...

Swiss Battery Club (Short Report) Circular Economy and Lithium-Ion Batteries 2023 Keywords: circular economy, lithium-ion battery waste, electric vehicles, recycling cost, battery design Affordable and "sustainable" lithium-ion batteries are key to the development of the electric vehicle market and to a clean

energy transition.

Sustainability Series: Energy Storage Systems Using Lithium-Ion Technologies of electrical power for future sale or consumption and reduce or eliminate the need for fossil fuels. Battery ESS ...

Different types of lithium batteries rely on unique active materials and chemical reactions to store energy. Each type of lithium battery has its benefits and drawbacks, along with its best ...

In the battery lab of the Materials for Energy Conversion laboratory, they have already uncovered the mechanism behind the aging of the cathode material. "The lithium iron phosphate has a crystalline structure that releases and reabsorbs lithium ions during each charge and discharge cycle," B&#252;chel explains.

Evolving technology for battery energy storage systems (BESS) raises the need for greater understanding of the associated risks. Battery chemistries, BESS for energy optimisation, thermal runaway are some factors to be considered. How can the risks associated with battery energy storage systems be managed?

Redux Energy delivers the safest LiFePO<sub>4</sub> lithium batteries, made in Switzerland, with 8 years warranty. Take a look here for more details or reach out for more information: [info@ ...](mailto:info@...)

Sustainability Series: Energy Storage Systems Using Lithium-Ion Technologies Energy storage systems (ESS) using lithium-ion technologies enable on-site storage of electrical power for future sale or consumption and reduce or eliminate the need for fossil fuels. Battery ESS using lithium-ion technologies such as lithium-iron phosphate (LFP) and

Circular economy for end-of-life lithium-ion batteries promise helping to avoid the scarcity of primary raw materials. Keeping environmental costs low by limiting mining of raw materials. Circular value chains could also help solve waste and ...

Compared to battery separators, membranes are much more complex in their morphological and chemical structure. However, they are regularly non-porous. Swiss Battery has developed an Ultrathin ion-selective polymer-membrane for ...

Redux Energy is the Swiss energy storage expert for LiFePO<sub>4</sub> lithium batteries in the range from 12V to 24V and 48V. These voltages allow for a broad range of use applications. Each application can be secured by an application-specific Battery Management System (BMS), in order to ensure optimal operation of the powered application and maximum longevity of the battery's lifecycle.

The project of post-Lithium-ion battery with high energy density is in collaboration with chemists at University of Fribourg (prof. K. Fromm's group) and funded by Swiss National Science Foundation, NRP 70 "Energy ...

Lithium-ion batteries degrade in complex ways. This study shows that cycling under realistic electric vehicle driving profiles enhances battery lifetime by up to 38% compared with constant current ...

A lithium-ion or Li-ion battery is a type of rechargeable battery that uses the reversible intercalation of  $\text{Li}^+$  ions into electronically conducting solids to store energy. In comparison with other ...

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