

What is a solid-state battery roadmap?

Based on an extensive literature review and an in-depth expert consultation process, the roadmap critically evaluates existing research as well as the latest findings and compares the development potential of solid-state batteries over the next ten years with that of established lithium-ion batteries.

When will a high-energy battery roadmap be released?

As part of the accompanying project, updates of the roadmap "High-energy batteries 2030+ and prospects for future battery technologies" (2017) are produced. In addition to the solid-state battery roadmap, a roadmap on next-generation batteries and an update on high-energy LIB will be developed in 2022 and 2023.

What are the main interests of a solid state battery?

Current key interests include solid-state batteries, solid electrolytes, and solid electrolyte interfaces. He is particularly interested in kinetics at interfaces. Abstract Solid-state batteries are considered as a reasonable further development of lithium-ion batteries with liquid electrolytes.

How can a solid-state battery be recycled?

Similar to the recycling of conventional LIB, these established processes can be adapted and applied to solid-state batteries to enable the recovery of their main cell components. The metallic components of solid electrolytes and cathodes are accessible by pyro- or hydrometallurgical recycling processes.

When will a Solid-state battery be available?

Stellantis and Honda announced the date of integration of solid-state battery prototypes in their R&D roadmaps for 2026 and 2030+, respectively. Blackstone Technologies built up their production facility for a polycrystalline solid electrolyte, which will be printed in 3D. They plan to reach a production capacity of 500 MWh in 2022.

Can solid-state batteries be commercially viable?

The roadmap demonstrates that solid-state batteries have a lot of potential, but will have to prove their commercial viability in the next five years. Current lithium-ion batteries (LIB) are based on liquid electrolytes and are used in many mobile and stationary applications.

The company is poised to unveil a suite of "super-gap" battery technologies encompassing fast charging and ultra-long life battery as well as its mass-production readiness roadmap for all ...

1. Solid Electrolyte: A non-flammable material that replaces traditional liquid electrolytes, preventing leakage and fire hazards. Cathode: Typically made from lithium metal oxides or ...

The progress of solid state battery technology relies on advancements in materials science, manufacturing techniques, and the creation of more efficient and ...

Explore the future of electric vehicle technology in our analysis of Tesla's approach to solid-state batteries. Discover the advantages of this innovative technology, ...

The goal of all-solid-state batteries with high safety and high energy density (500 Wh kg<sup>-1</sup>) could be achieved from the following aspects: (a) currently, perfect solid electrolyte ...

Roadmap for Competitive Production of Solid-State Batteries: How to Convert a Promise into Reality ... Basque Research and Technology Alliance (BRTA), Alava Technology ...

The roadmap for Battery 2030+ is a long term-roadmap for forward looking battery research in Europe. ... as agreed upon in the Strategic Energy Technology Plan (the SET Plan) proposed ...

This roadmap on solid-state batteries (SSB) was developed as part of the accompanying project BEMA II funded by the Federal Ministry of Education and Research (BMBF) under the initiative ...

Toyota's roadmap for solid-state batteries includes introducing next-generation electric vehicles in 2026 with a cruising range of over 620 miles, reducing costs, and achieving ...

Source: Chargedevs By 2014, the company had improved its battery technology 5X in power output compared to 2012. At that time, its solid-state battery had a power density of around ...

2020 roadmap on solid-state batteries. ... (fast charging), and safer EVs has recently created a resurgence of interest in solid state batteries (SSB). ... the advances in ...

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