New Battery Technology Roadmap

What is the battery technology roadmap?

This updated roadmap serves as a strategic guide for policy makers and stakeholders,providing a detailed overview of the current state and future directions of battery technologies,with concluding recommendations with the aim to foster industry resilience,competitiveness and sustainability in Europe's Battery Technology sectors.

What is the battery 2030+ roadmap?

Based on a Europe-wide consultation process, the BATTERY 2030+ roadmap presents the actions needed to deliver on the overall objectives and address the key challenges in inventing the sustainable, safe, high-performance batteries of the future.

What is a battery manufacturing roadmap?

The main focus of the manufacturability roadmap will therefore focus on providing methodology to develop beyond-state-of-the-art processes in the future. In this sense, the challenges faced by the battery manufacturing industries can be divided into two levels.

What are the key elements of a battery roadmap?

Key elements of the roadmap include: 1. Technological Review of Mainstream Battery Technologies: A comprehensive analysis of the four prominent battery technologies,lead-,lithium-,nickel- and sodium-based,detailing recent improvements and future potentials. 2.

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.

Why should batteries be included in the current roadmap?

ologies for inclusion in the current roadmap. Sustainability stands as a paramount driver, aiming to produce batteries with minimal environmental impact, obtained in adherence to social and ecological standards, ensuring longevity, safety, and th potential for repair, reuse, or repurposing. As such, the essential electrochemical st

o to provide new tools and breakthrough technologies to the European battery industry throughout the value chain o to enable long-term European leadership in both existing markets (e.g., ...

A goal of BATTERY 2030+ is to develop a long-term roadmap for forward-looking battery research in Europe. This roadmap suggests research actions to radically transform the way we discover, develop, and design ultra-high-performance, durable, safe, sustainable, and affordable batteries for use in real applications.

The purpose is to make a ...

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new battery technologies reaching as far as 2050. The roadmap focuses on: o Developing new battery chemistries and battery concepts (see Figure below) for a diverse range of present and future applications (Topic 1); o Accelerating battery development and concept through the realization of new tools in the new area of digitalization (Topic 2).

The first chapter of the White Paper delves into the mainstream battery technologies of today, encompassing lead, lithium, nickel, and sodium-based batteries. Meanwhile, the second chapter explores the most promising upcoming technologies identified to complement the progress achieved with existing technologies. A. Mainstream battery technologies

This "Alternative Battery Technologies - Roadmap 2030+" was developed as part of the accompanying project BEMA II, which is funded by the German Federal Ministry of Education ...

Roadmap on Li-ion battery manufacturing research. Patrick S Grant 14,1,13, David Greenwood 2, Kunal Pardikar 3,13, Rachel Smith 3,13, Thomas Entwistle 3, Laurence A Middlemiss 3, Glen Murray 3, Serena A Cussen 4,13, M J Lain 2, M J Capener 2, M Copley 2, Carl D Reynolds 5,13, Sam D Hare 6,13, Mark J H Simmons 6,13, Emma Kendrick 5,13, ...

The roadmap for Battery 2030+ is a long term-roadmap for forward looking battery research in Europe. The roadmap suggests research actions to radically transform the way we discover, develop, and design ultra-high-performance, durable, safe, sustainable, and affordable batteries for use in real applications. This is a collective European research effort to support the urgent ...

Batteries Europe and Battery 2030+ remain committed to supporting the entire battery value chain through holistic approaches. Future Roadmaps and Key Performance ...

A look at the 2024 Battery Roadmaps and perhaps the direction that the battery and application industry are moving towards. The data has been taken from the last half of 2023 and the first quarter of 2024.

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. From a macro perspective, the most ...

Key features of this new roadmap affecting R& D on batteries, include: o An update of the innovation potential of the mainstream battery technologies o Identification and analysis of the most promising high-TRL

technologies o New R& D challenges related to circularity and critical raw materials aspects

New battery technologies seem likely to enter future markets, for example, solid-state, lithium-sulfur, redox flow, and metal-air batteries in mobility and stationary applications. Proposed new recycling processes to cope with all these chemistries (and related BMS) will create new process challenges; for example, the presence of Li metal will affect safety aspects of the recycling ...

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new battery technologies reaching as far as 2050. The roadmap focuses on: o Developing new battery chemistries and battery concepts (see Figure below) for a diverse range of present and future applications (Topic 1); o Accelerating battery development and concept through the realization of new tools in the new area of digitalization (Topic 2). Today, Lithium-ion batteries ...

Our battery technology roadmap to change the future of cars ... Powered by a range of new advanced batteries to appeal a wider range of customers, these vehicles will be built and designed differently. Cars built to meet everyone"s ...

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