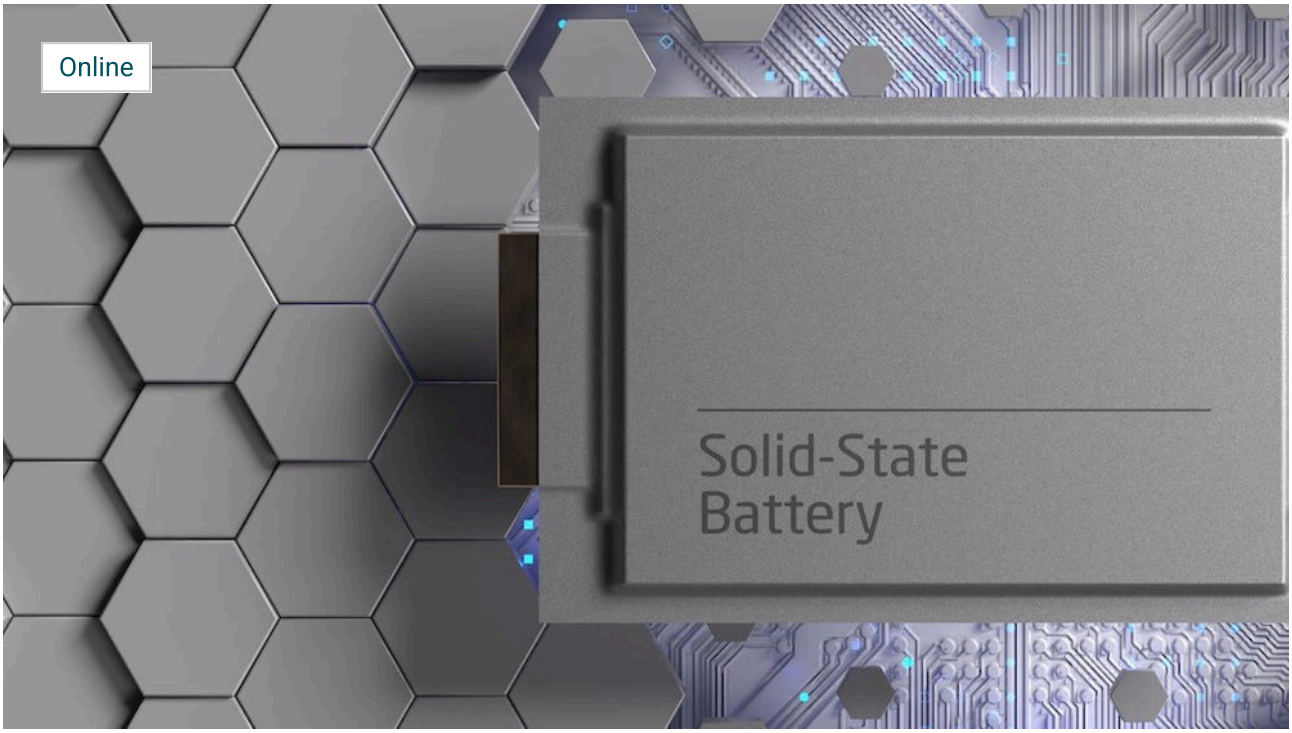
Veranstaltungsnummer: VA25-00837

Lithium-Ionen-Festkörperbatterien

Funktion, Chancen und Herausforderungen besonders im Bereich der Elektromobilität



Termin

Di. 01.04.2025, 09:00 Uhr –
Di. 01.04.2025, 15:45 Uhr

Veranstaltungsort

hdt+ digitaler Campus

Teilnahmegebühren

Präsenz-Teilnahme 665,00 €*
Für HDT-Mitglieder 595,00 €*

* mehrwertsteuerfrei, einschließlich veranstaltungsgebundener Arbeitsunterlagen

Weitere Informationen und die Möglichkeit zur Online-Buchung **Ihrer Teilnahme finden Sie auf** der Veranstaltungs-Webseite.

Stand: 14.04.2025, 13:06 Uhr

Lithium-Ionen-Festkörperbatterien

Lithium-ion solid-state batteries

Solid-state battery cells (solid-state batteries) are being touted as the "next big thing" in electric vehicle technology because they offer the potential of particularly high energy density and high safety. However, there remain challenges to their technical maturity, particularly in manufacturing, cost, and performance. This seminar introduces how this battery cell technology works. This is accompanied by an overview of the wide variety of solid-state battery subtypes with their individual characteristics.
Since this technology is a completely new development, there are also hurdles for its use in battery systems. In particular,cost, energy density and producibility play a role here. Based on concrete examples and a roadmap developed from research projects, input from cell manufacturers and internal assessments, possible initial use cases of this promising technology are recommended.
You will get answers to the following questions:
How do these solid-state batteries work?
Where does this technology stand?
What are its application potentials?
What are the remaining hurdles to their widespread use?
How do solid-state accumulators, solid-state batteries, solid-state batteries differ?
What materials are the electrolytes in solid-state batteries made of?

On the subject

Battery technology is currently experiencing a tremendous upswing due to its greatly reduced costs and large increases in performance, such as the increase in electromobility and the use of batteries for the energy transition. However, requirements are also continuing to increase: greater energy density is desired for longer ranges for electric vehicles, or particularly high safety with good performance for air cabs, for example, or longer battery life for smartwatches. Solid-state lithium-ion batteries have the potential to meet these increasing requirements. However, they do not yet have the same level of maturity as conventional lithium-ion battery technology.

Objective

The seminar is designed to help participants understand the functionality, application potential and challenges of solid-state batteries. Based on this, they will be able to make their own initial assessment of the usability of this technology for many application scenarios and its significance for their own company.

Participant group

The seminar is aimed at employees, decision-makers and managing directors as well as engineers and people in similar positions. Industries that use batteries or are active in the battery context are addressed. E.g. in electromobility and aviation: developers, manufacturing companies, recyclers, plant engineers, etc., who are looking for a deeper understanding of the topic of solid-state batteries. This is a topic where many great goals and successes are reported in the media, but whose potential and basis can hardly be assessed without background knowledge. Prior knowledge of chemistry is not required, but a technical background is helpful. Upon request and agreement among participants, presentations can also be held in German – slides will be English.

Zum Thema

Die Batterietechnologie erlebt momentan durch ihre stark gesunkenen Kosten und große Leistungssteigerung einen ungeheuren Aufschwung, wie z. B. durch die zunehmende Elektromobilität und den Einsatz von Batterien für die Energiewende. Die Anforderungen nehmen jedoch ebenfalls weiter zu: Gewünscht ist eine größere Energiedichte für längere Reichweiten für Elektrofahrzeuge oder besonders hohe Sicherheit bei guter Performance für z. B. Flugtaxis oder längere Akkulaufzeit von Smartwatches. Festkörper-Lithium-Ionen-Batterien, auch Solid-State-Batterien genannt, haben das Potenzial, diese zunehmenden

Anforderungen zu erfüllen. Allerdings haben sie noch nicht den gleichen Reifegrad wie die konventionelle Lithium-Ionen-Batterietechnologie.

Zielsetzung
Das Seminar soll den Teilnehmenden dazu dienen, Funktionsweise, Anwendungspotenziale und Herausforderungen von Festkörperbatterien zu verstehen. Basierend darauf ist eine eigene erste Bewertung der Verwendbarkeit dieser Technologie für viele Anwendungsszenarien und ihrer Bedeutung für das eigene Unternehmen möglich.

Programm

01.04.2025

09:00–09:15	Introduction, Agenda, Q & A
14:45–15:00	Coffee break
12:00–13:00	Lunch break
09:15–09:30	Lithium-ion solid-state batteries: the next big thing in the battery world!?
15:00–15:30	Market Overview: Who are the players on the solid-state-battery field?
09:30–10:15	(Solid-State-)Battery Basics: How does it work?
15:30–15:45	Summary and Closure
13:00–14:00	Producibility of Solid State Battery Cells: Does this also work in a Gigafactory?
10:15–10:30	Coffee break
10:30–11:15	Solid-State-Battery Components: A guide through many possibilities
14:00–14:45	Safety Behavior of Soilid State Batteries: Even safer than conventional Lithium-ion?
11:15–12:00	Automotive Solid State Battery Systems: Simply exchanging the battery cells?

Zertifizierungen

Hier finden Sie weitere Seminare im Bereich **Batterietechnik und E-Mobilität**.