

# St john s solid-state batteries



## Overview

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Solid-state batteries can use metallic lithium for the anode and oxides or sulfides for the cathode, thereby enhancing energy density. The solid electrolyte acts as an ideal separator that allows only lithium ions to pass through.

**Specific energy**  
 Thin film type: 300-900 Wh/kg (490-1,470 kJ/lb) · Bulk type: 250-500 Wh/kg (410-820 kJ/lb)

**Self-discharge rate** 6% @ 85 °C (month)

**Cycle durability** 10,000-100,000

**Nominal cell voltage**  
 Thin film type: 4.6 V  
 Bulk type: 2.5 V

Watch full video [Overview](#)

A solid-state battery (SSB) is an that uses a to between the , instead of the liquid or found in conventional batteries. Theoretically, solid-state batter. Between 1831 and 1834, discovered the solid electrolytes and , which laid the foundation for . By the late 1950s, several silver-conducting electroche. Candidate materials for (SSEs) include ceramics such as , , sulfides and . Mainstream oxide solid electrolytes include  $\text{Li}_{1.5}\text{Al}_{0.5}\text{Ge}_{1.5}(\text{PO}_4)_3$  (LAGP),  $\text{Li}_1$ . Solid-state batteries are potentially useful in , , , and . and have used a variety of battery technologies, including .

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### Solid-state battery

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### [Solid-State Battery Advancements, Challenges, and Industry Impacts](#)

Browse recent research findings on solid-state batteries, including key challenges to adoption, various alternative materials, and operando studies that offer new insights.



### Solid State Batteries: Advanced Energy Materials

This collection highlights original research and review articles from leaders in the fast-moving field of solid state battery research, as published in the journals Advanced Energy Materials,

### 10 Solid-State Battery Companies to Watch In 2026

The article explores the latest advancements from 10 solid-state battery companies working to improve the technology.



### Get Driving Directions, Live Traffic & Road Conditions



## Battery Seminar , PlugVolt: Jul. 14

Entire day of technical tutorials led by distinguished industry experts and professors from top US universities covering solid-state batteries, next-gen anodes and cathodes, battery diagnostics, failure

Step by step directions for your drive or walk. Easily add multiple stops, see live traffic and road conditions. Find nearby businesses, restaurants and hotels. Explore!



## All Current And Upcoming EVs With Solid-State Batteries

In this list, we're covering both semi-solid-state and all-solid-state batteries. Some of these EVs are already available in select markets, while others are planned to go on sale in the

## Solid State Marine Batteries

Discover the first solid-state marine battery-stronger, lighter, and safer. Assembled in the USA, our innovative solid electrolyte design offers unmatched energy density, faster charging, and superior



## Building the Best Solid State Battery , QuantumScape

Our Technology QuantumScape developed the industry's first anode-less cell design, which delivers high energy density while lowering material costs and simplifying manufacturing. Our innovative

## **Solid-State Batteries: Materials, Technologies, and Future**

By examining case studies and real-world applications, this chapter offers a detailed roadmap for the commercialization and sustainability of solid-state batteries, positioning them as a



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