

# Next-gen energy storage

## Weekly Intelligence Report

2026-06-07 | 21 articles | 5 countries  
troy-technical.jp

This Week's Keyword

## Solid-State Battery Race

China accelerates, US/EU respond, new chemistries emerge

21

articles

Total Articles Analyzed

5

countries

Source Countries

2026

year

CATL Na-ion Mass Prod.

2027

year

BYD SSB Pilot Prod.

### All 21 Articles This Week — 5-Axis Evaluation Matrix

How to read columns — Tech Novelty: degree of breakthrough Market Proximity: closeness to commercialization Market Impact: industry-wide effect Data Reliability: quantitative data & peer review US/EU Relevance: direct impact on US/European companies & supply chains

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#01	Tsinghua Li-S SSB Break	Research	●●●●● ●	●●●●○ ○	●●●●● ●	●●●●○ ○	●●●●○ ○	Tsinghua achieves solid-state Li-S breakthrough, doubling EV energy density and halving weight potential.
#02	Degassing for SSB Perf.	Analysis	●●●●○ ○	●●●●○ ○	●●●●○ ○	●●●●○ ○	●●●●○ ○	Efficient degassing is critical for SSB performance and safety; vacuum tech and cost-effectiveness explored.
#03	BYD 2027 Sulfide SSB	Corporate Strategy	●●●●○ ○	●●●●○ ○	●●●●● ○	●●●●○ ○	●●●●○ ○	BYD targets 2027 pilot production for sulfide solid-state batteries, accelerating Chinese EV development.
#04	Semi-SSB Boost Profit	Market Analysis	●●●●○ ○	●●●●● ○	●●●●● ○	●●●●○ ○	●●●●○ ○	Semi-solid-state batteries to boost automaker profitability; China advances standards, 15 GWh+ shipments by 2026.
#05	CATL 2026 Na-ion MP	Product Announcement	●●●●○ ○	●●●●● ●	●●●●● ●	●●●●○ ○	●●●●○ ○	CATL confirms 2026 mass production of sodium-ion batteries, targeting 600km range and -40°C operation.
#06	Nissan, Gelion, Oxford	Collaboration	●●●●● ○	●●●●○ ○	●●●●● ○	●●●●○ ○	●●●●○ ●	Nissan, Gelion, Oxford partner on next-gen solid-state Li-S EV batteries, targeting cost parity with China by 2028.
#07	Chinese Lab Li-Metal	Research	●●●●● ●	●●●●○ ○	●●●●● ●	●●●●○ ○	●●●●○ ○	Chinese lab reports solid-state Li-metal battery with 451.5 Wh/kg, 3-min charge, 81.9% capacity after 700 cycles.
#08	U.S. DOE SSB Scale-Up	Government Policy	●●●●○ ○	●●●●○ ○	●●●●● ○	●●●●○ ○	●●●●○ ●	U.S. DOE boosts collaboration for flow and solid-state lithium battery manufacturing scale-up with national labs.
#09	Dendrite Suppression	Research	●●●●● ○	●●●●○ ○	●●●●○ ○	●●●●○ ●	●●●●○ ○	ResearchGate details lithium dendrite suppression via nanofiller additives in solid composite electrolytes.
#10	Apple MagSafe SSB 2026	Product Announcement	●●●●● ○	●●●●● ○	●●●●● ○	●●●●○ ○	●●●●○ ●	AppleInsider unveils 2026 iPhone MagSafe solid-state batteries, emphasizing safety, high density, and lifespan.
#11	Quasi-SS Na-Metal Batt	Research	●●●●● ○	●●●●○ ○	●●●●○ ○	●●●●○ ●	●●●●○ ○	Dual interlocked mediators enable ultrafast-charging, long-life sodium metal batteries with quasi-solid-state electrolytes.
#12	Sulfide SE Film 8μm	Research	●●●●● ○	●●●●○ ○	●●●●○ ○	●●●●○ ●	●●●●○ ○	Sulfide solid electrolyte film achieves 86.3% capacity retention after 250 cycles with 8μm ultrathin layer.

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#13	Garnet LLZO SE Review	Research Review	●●●○ ○	●○○○ ○	●●●○ ○	●●●● ●	●●●○ ○	Garnet-type LLZO solid electrolyte shows enhanced interfacial contact and stability, achieving over 1000 hours stable operation.
#14	Asymmetric Comp. SE	Research	●●●● ○	●○○○ ○	●●●○ ○	●●●● ●	●●●○ ○	Asymmetric composite solid electrolytes dramatically boost interfacial stability and room-temp ionic conductivity in SS-Li metal batteries.
#15	LAGP & Halide SE Opt.	Research	●●●○ ○	●○○○ ○	●●●○ ○	●●●● ●	●●●○ ○	Microstructural optimization of NASICON-type LAGP and promise of halide-based electrolytes for SSBs.
#16	EV Battery Certificates	Market Overview	●○○○ ○	●●●● ●	●●○○ ○	●○○○ ○	●●○○ ○	EVLIFE highlights importance of battery certificates for used EVs, hints at future of solid-state batteries.
#17	J-Star Texas Facility	Corporate Strategy	●●●○ ○	●●●○ ○	●●●○ ○	●●●○ ○	●●●● ●	J-Star Holding to construct \$122.5M solid-state battery facility in Baytown, Texas, with Taiwan Central Bank approval.
#18	Hongli Group SSB Shift	Corporate Strategy	●●○○ ○	●●○○ ○	●●○○ ○	●●○○ ○	●●●● ●	Hongli Group Inc. shifts strategy to solid-state lithium battery technology, appointing Dr. Philip A. Medina.
#19	Solidion Space SSB	Product Announcement	●●●● ○	●●○○ ○	●●○○ ○	●●○○ ○	●●●● ●	Solidion Technology unveils patented extreme-climate solid-state battery tech targeting LEO AI data centers and space.
#20	Japan METI SSB 2030	Government Policy	●●○○ ○	●●●○ ○	●●●● ○	●●●○ ○	●●●● ○	Japan's METI accelerates solid-state battery commercialization by 2030, aiming to triple battery sales for AI data centers.
#21	Guoxiang SSB Complex	Corporate Strategy	●●○○ ○	●●●○ ○	●●●● ○	●●○○ ○	●●●● ○	China's Guoxiang Shiji to build integrated solid-state battery industrial complex in Shanghai, unifying R&D; to mass production.

●●●●○ High ●●●○ Med-High ●●○○ Med ●○○○ Low | Yellow highlight = featured article

## Three Questions That Demand Your Decision This Week

### 1 Is your EV battery roadmap competitive with China's 2027 targets?

BYD and other Chinese OEMs are targeting pilot production of sulfide solid-state batteries by 2027, with energy densities over 400 Wh/kg. Does your current R&D; and commercialization timeline match this aggressive pace, or risk falling behind?

### 2 How will CATL's 2026 Na-ion mass production impact your market strategy?

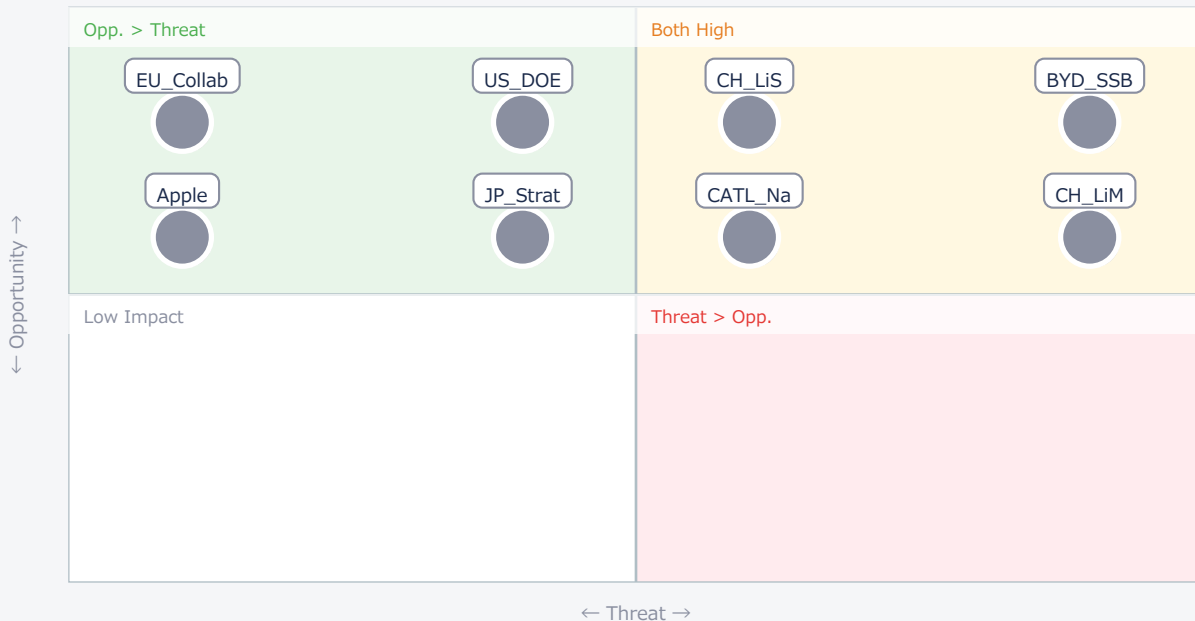
CATL's 'Naxtra' sodium-ion batteries, with 175 Wh/kg and -40°C operation, are confirmed for mass production in 2026 at potentially 30% lower cost. Are you prepared for this immediate disruption in affordable EV and cold-climate energy storage markets?

### 3 Are your domestic SSB manufacturing and IP strategies robust enough?

With US DOE boosting collaboration and Taiwan's J-Star investing in US facilities, while China builds integrated complexes, securing domestic SSB manufacturing and IP is critical. What concrete steps are you taking to protect and expand your competitive edge?

## Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
● CH_LiS	Critical	New chemistry	China leads R&D;
● BYD_SSB	Critical	New EV tech	China market share
● CATL_Na	Critical	Cost-effective EV	China dominates
● CH_LiM	Critical	Ultra-fast charge	China tech leap
● EU_Collab	Opp.	Joint R&D;	Cost pressure
● US_DOE	Opp.	Domestic mfg	Slow scale-up
● Apple	Opp.	New product line	IP challenges

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● JP_Strat	Opp.	AI power demand	Global competition
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## Deep Dive ① — Tsinghua's Li-S SSB Breakthrough

#01 | 2026/05/30 | Make Tech Easier | Tech Novelty ●●●●● Proximity ●○○○○ Market Impact ●●●●● Data Reliability ●●●○○ US/EU Relevance ●●●●○

Tsinghua University researchers have achieved a significant breakthrough in solid-state lithium-sulfur (Li-S) batteries, demonstrating double the energy density of standard EV batteries. This innovation promises to eliminate 'range anxiety' and potentially halve EV weight.

The core innovation lies in replacing flammable liquid electrolytes with a solid-state counterpart, enabling safe utilization of high-capacity Li-S chemistry. This boosts energy density and enhances safety by mitigating thermal runaway risks. While lab-scale, it's a pivotal step.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: The reported doubling of energy density for Li-S SSBs is a significant academic breakthrough, pushing the theoretical limits of battery chemistry. However, the 'laboratory demonstration stage' implies substantial technical barriers remain, particularly around cycle life, power density, and manufacturability at scale. [Opportunity] for US/EU materials & IP holders to license or acquire this foundational IP, or for OEMs to partner for next-gen EV platforms. [Threat] is that China is clearly leading in fundamental SSB research, potentially creating a long-term competitive gap. US/EU R&D; teams must immediately assess this specific chemistry and its implications for their own roadmaps, and Business Development should explore potential collaboration or IP acquisition by Q3 2026.

## Deep Dive ② — BYD's Aggressive SSB Commercialization

#03 | 2026/05/29 | Reddit (citing carnewschina.com) | Tech Novelty ●●●○○ Proximity ●●●○○ Market Impact ●●●●○ Data Reliability ●●○○○ US/EU Relevance ●●●●○

Chinese automotive giant BYD plans limited pilot production of sulfide-based all-solid-state batteries by 2027, targeting mass production by 2030. This signals an accelerated commitment from Chinese OEMs to commercialize advanced battery tech.

Sulfide-based SSBs offer higher energy density, extended cycle life, faster charging, and enhanced safety. BYD intends to integrate these into premium EV sub-brands first. Other Chinese automakers like Changan and Chery also target 400 Wh/kg mass production by 2027.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: BYD's 2027 pilot production target for sulfide SSBs is a concrete, near-term commercialization signal, not just lab research. While the data reliability is from a news report, the aggressive timeline from a major OEM is credible. Technical barriers will include scaling sulfide electrolyte manufacturing and managing interfacial stability. [Opportunity] for US/EU materials suppliers to develop compatible components or for OEMs to accelerate their own SSB integration plans. [Threat] is that Chinese OEMs are moving faster to integrate SSBs, potentially gaining a significant performance and cost advantage in the EV market. US/EU OEMs and Procurement teams must immediately assess their current battery supplier roadmaps against these Chinese timelines and initiate competitive analysis by end of Q2 2026.

## Deep Dive ③ — CATL's 2026 Sodium-Ion Battery Launch

#05 | 2026/06/02 | Battery Energy Storage System | Tech Novelty ●●●○○ Proximity ●●●●● Market Impact ●●●●●  
Data Reliability ●●●●○ US/EU Relevance ●●●●○

CATL, the world's largest battery maker, confirms mass production of sodium-ion batteries will commence in 2026, having resolved key manufacturing bottlenecks. Its 'Naxtra' batteries target 600km range and -40°C operation.

These Na-ion batteries achieve 175 Wh/kg, comparable to LFP, but at potentially 30% lower cost. Their extreme cold-weather performance is a game-changer for cold climates. CATL predicts Na-ion could replace 30-40% of the existing battery market.

### ► Strategic Analyst's Perspective

Strategic Analyst's Perspective: CATL's confirmed 2026 mass production of Na-ion batteries is a significant market event, not a research breakthrough. The stated performance (175 Wh/kg, -40°C operation) and cost advantage (30% lower than LFP) are highly realistic given CATL's manufacturing prowess. This technology presents a direct, near-term alternative to lithium-ion, especially for affordable EVs and stationary storage. [Opportunity] for US/EU OEMs to diversify their battery supply chains and integrate cost-effective Na-ion solutions for entry-level EVs or cold-weather applications. [Threat] is that CATL will further solidify its market dominance, potentially undercutting US/EU battery manufacturers and EV makers relying solely on lithium chemistries. Procurement and Strategy teams must immediately evaluate Na-ion as a viable option and engage with potential suppliers by Q3 2026.

## Other Notable Articles

Semi-Solid-State Batteries to Boost Automaker Profitability: China Advances National Standards, 15 GWh+ Shipments Forecasted by 2026 (Gasgoo / Industry Analysis)

Tech Novelty ●●○○○ Proximity ●●●●○ Market Impact ●●●●○

Semi-SSBs are a pragmatic bridge solution, with China forecasting 15 GWh+ shipments by 2026, impacting EV profitability.

J-Star Holding to Construct \$122.5M Solid-State Battery Facility in Baytown, Texas, with Taiwan Central Bank Approving \$60M Investment (Stock Titan)

Tech Novelty ●●●○○ Proximity ●●●○○ Market Impact ●●●○○

Taiwanese investment in a US SSB manufacturing facility signals a push for domestic production and supply chain diversification.

Solidion Technology Unveils Patented Extreme-Climate Solid-State Battery Tech Targeting LEO AI Data Centers, Lunar Economy, and Space Exploration Markets (Newswire.ca)

Tech Novelty ●●●●○ Proximity ●●○○○ Market Impact ●●○○○

US firm targets niche, high-value space and extreme-climate markets with patented SSB tech, highlighting specialized applications.

China's Guoxiang Shiji to Build Integrated Solid-State Battery Industrial Complex in Shanghai Jiading, Unifying R&D; to Mass Production (Gasgoo Express)

Tech Novelty ●●○○○ Proximity ●●●○○ Market Impact ●●●●○

China's integrated SSB industrial complex strategy aims to accelerate R&D; to mass production, strengthening its global lead.

Degassing Critical for Solid-State Battery Performance and Safety; Vacuum Technologies and Cost-Effectiveness Explored (PatSnap Eureka)

Tech Novelty ●●○○○ Proximity ●●●○○ Market Impact ●●●○○

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Effective degassing is a crucial, often overlooked, manufacturing step for SSB performance, safety, and commercial viability.

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## Recommended Actions This Week

Action recommendations based on article evaluation matrix and opportunity/threat analysis.

### ■ Immediate (this week)

- [Strategy] Assess China's aggressive SSB/Na-ion timelines (BYD 2027, CATL 2026) against internal EV battery roadmaps.
- [R&D;] Initiate rapid review of Tsinghua's Li-S SSB breakthrough for potential IP and competitive implications.
- [Procurement] Identify current supply chain exposure to Chinese battery manufacturers and potential risks/opportunities.

### ■ Short-term (1 month)

- [Business Dev] Explore partnerships or licensing opportunities for advanced solid electrolyte materials (e.g., sulfide, halide, LLZO composites).
- [R&D;] Evaluate the feasibility and cost-effectiveness of integrating Na-ion batteries into specific product lines (e.g., entry-level EVs, stationary storage).
- [Strategy] Engage with US DOE programs (e.g., national labs collaboration) to accelerate domestic SSB manufacturing scale-up.

### ■ Medium-long term (quarter+)

- [Executive] Re-evaluate long-term battery technology investment strategy, balancing full SSB development with pragmatic semi-SSB and Na-ion adoption.
- [Legal/IP] Develop a robust IP strategy to protect next-gen battery innovations and monitor competitor patent filings, especially from China.
- [Procurement] Diversify battery material and component supply chains to mitigate geopolitical risks and ensure access to critical resources.
- [R&D;] Invest in advanced manufacturing processes, such as efficient degassing and solvent-free production, to reduce SSB costs and accelerate commercialization.

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troy-technical.jp/en | Original curation. Article copyrights belong to respective authors. | Gemini API + Claude | 2026-06-07

# **SolidStateBattery — Selected Articles**

Date: 2026-06-07

Articles: 21

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#20 Japan's METI Accelerates Solid-State Battery Commercialization by 2030, Aims to Triple Battery Sales to Meet AI Data Center Demand

#21 China's Guoxiang Shiji to Build Integrated Solid-State Battery Industrial Complex in Shanghai Jiading, Unifying R&D to Mass Production

# Tsinghua University Achieves Breakthrough in Solid-State Lithium-Sulfur Batteries, Doubling EV Energy Density and Halving Weight Potential

Published May 30, 2026   Make Tech Easier   China



## OVERVIEW

Researchers at China's Tsinghua University have announced a significant breakthrough in solid-state lithium-sulfur batteries, demonstrating double the energy density of standard EV batteries. This innovation promises to eliminate 'range anxiety' and potentially halve the weight of electric vehicles. The transition from liquid to solid electrolytes enables both higher energy density materials and enhanced safety, shifting the focus from lab-scale proof-of-concept to manufacturable product development.

## IN DEPTH

### Key Findings

A research team at Tsinghua University in China has achieved a significant breakthrough in solid-state lithium-sulfur (Li-S) battery technology, demonstrating a system with double the energy density of conventional electric vehicle (EV) batteries. This advancement holds the potential to substantially reduce EV weight and address widespread 'range anxiety' concerns among consumers.

### Technical / Clinical Details

The core of this innovation lies in replacing flammable liquid electrolytes with a solid-state counterpart, enabling the safe utilization of high-capacity lithium-sulfur chemistry. This design inherently boosts energy density while significantly enhancing safety by mitigating risks associated with electrolyte leakage and thermal runaway. The reported doubling of energy density is a crucial step towards lighter battery packs, which directly translates to improved vehicle efficiency and performance. Lithium-sulfur batteries have long been considered a promising next-generation chemistry due to their high theoretical energy density, but challenges related to sulfur cathode utilization and cycle life have hampered their commercial viability. The all-solid-state approach offers a compelling pathway to overcome these hurdles by providing a stable interface and mechanical robustness.

### Background & Context

The electric vehicle market is rapidly expanding, making battery technology a critical determinant of progress. Range and safety remain paramount concerns for EV adoption. Tsinghua University's development offers a compelling solution to these challenges, potentially accelerating the transition to more capable and safer EVs. The global race for solid-state batteries is intense, with major automotive and battery manufacturers investing heavily in research and development. This breakthrough positions Chinese research at the forefront of this advanced battery segment, particularly in the promising Li-S chemistry.

## Strategic Significance & Outlook

While currently at the laboratory demonstration stage, the implications of this technology for the EV industry are profound. The immediate next step involves scaling up these laboratory successes into manufacturable products. Key challenges for commercialization will include reducing manufacturing costs, establishing robust mass production processes, and further improving cycle life under real-world operating conditions. This achievement by Tsinghua University represents a pivotal step towards enhancing EV performance and accelerating their widespread adoption globally.

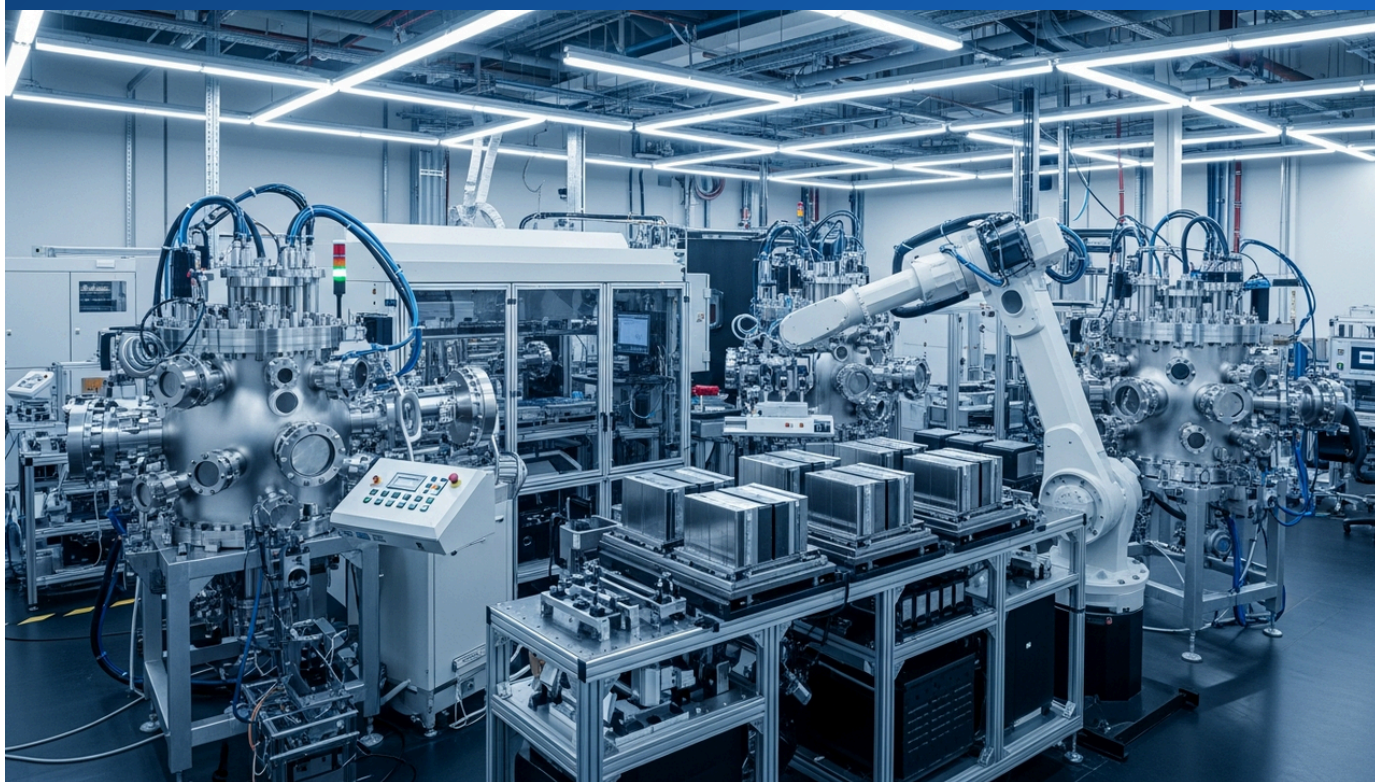
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Source: <https://maketecheasier.com/a-breakthrough-in-solid-state-lithium-sulfur-batteries-has-quietly-achieved-double-the-energy-density-of-standard-ev-batteries-a-quiet-laboratory-victory-that-could-finally-eliminate-range/>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Degassing Critical for Solid-State Battery Performance and Safety; Vacuum Technologies and Cost-Effectiveness Explored

Published May 29, 2026 PatSnap Eureka International



## OVERVIEW

Efficient degassing, the removal of trapped gases and volatile compounds, is crucial for the performance and safety of solid-state batteries (SSBs) during manufacturing. Vacuum degassing techniques are applied at various stages, including electrode preparation, electrolyte integration, and final cell assembly, to prevent potential issues. This analysis highlights the importance of cost-effectiveness for industrial-scale implementation, positioning degassing as a pivotal process for SSB commercialization.

### Key Findings

A recent report emphasizes the critical role of degassing in the manufacturing process of solid-state batteries (SSBs), stating that the efficient removal of trapped gases and volatile compounds is paramount for achieving optimal battery performance and safety. These entrapped substances can lead to increased internal resistance, shortened cycle life, and compromised safety, making effective removal indispensable.

### Technical / Clinical Details

Degassing techniques are primarily applied during electrode preparation, solid electrolyte integration, and the final cell assembly stages. Specifically, vacuum degassing is being thoroughly investigated for its ability to efficiently extract impurities during these processes. For instance, gases generated during high-temperature sintering can expand within the battery, potentially damaging the structural integrity of electrodes and electrolytes. Leading companies like LG Energy Solution have developed multi-stage degassing technologies, including controlled atmosphere processing and vacuum-assisted manufacturing, which are being integrated with dry coating processes to effectively eliminate moisture and volatile compounds. This marks a critical step towards the commercial viability of SSBs aiming for high energy density and extended cycle life.

### Background & Context

SSBs are heralded as the next-generation battery technology due to their superior safety and energy density compared to conventional liquid electrolyte lithium-ion batteries. However, their manufacturing processes are complex, requiring the resolution of intricate technical challenges to ensure quality and stability. Degassing is one such challenge, directly impacting manufacturing costs and yield, thus necessitating cost-effective optimization for industrial-scale deployment.

## Strategic Significance & Outlook

The development and implementation of efficient degassing technologies are crucial for improving the reliability and mass production capabilities of SSBs. Moving forward, combining advanced degassing with sophisticated online monitoring systems and AI-driven process control is expected to enhance precision and efficiency, thereby accelerating SSB commercialization. This will enable the widespread adoption of solid-state batteries in electric vehicles, portable electronic devices, and stationary energy storage systems, among other applications.

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Source: <https://eureka.patsnap.com/report-how-to-choose-the-best-degassing-method-for-solid-state-batteries>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# BYD Targets 2027 Pilot Production for Sulfide Solid-State Batteries as Chinese OEMs Accelerate EV Development

Published May 29, 2026    [Reddit \(citing carnewschina.com\)](#)    China



## OVERVIEW

Chinese automotive giant BYD has filed a new patent for sulfide-based all-solid-state batteries and aims for limited pilot production by 2027, with mass production by 2030. This technology is expected to deliver higher energy density, extended lifespan, faster charging, improved safety, and increased driving range. Other Chinese automakers like Changan and Chery are also accelerating solid-state EV battery development, with some targeting mass production at over 400 Wh/kg by 2027.

### Key Findings

BYD, one of China's leading automotive manufacturers, has announced plans to initiate limited pilot production of sulfide-based all-solid-state batteries by 2027, with an ambitious target for mass production by 2030. This strategic move, supported by new patent filings, signals an accelerated commitment from Chinese automakers to commercialize advanced battery technologies for electric vehicles (EVs).

### Technical / Clinical Details

The sulfide-based solid-state battery technology under development by BYD is anticipated to offer significant performance improvements over existing lithium-ion batteries that utilize liquid electrolytes. Key advantages include substantially higher energy density, extended cycle life, faster charging capabilities, and enhanced safety. Solid electrolytes mitigate the risks of leakage and thermal runaway, ensuring a more stable operating environment. BYD plans to initially integrate these advanced batteries into its premium EV sub-brands before broader deployment across its vehicle lineup.

### Background & Context

All-solid-state batteries are widely regarded as the next frontier for EV power sources, leading to a global race among car manufacturers and battery companies. In China, in addition to BYD, major automakers such as Changan and Chery are also heavily invested in solid-state EV battery development. Changan aims to deploy prototype vehicles within the year and target mass production with energy densities of 400 Wh/kg by 2027. Similarly, SAIC and its Chinese partner Qingtao Energy are developing EV prototypes powered by 'Guangqi' solid-state batteries exceeding 400 Wh/kg, also aiming for mass production in 2027. Furthermore, the Chinese Ministry of Industry and Information Technology (MIIT) is actively working on national standards for solid-state batteries, underscoring a concerted national effort.

## Strategic Significance & Outlook

The establishment of a concrete pilot production target for 2027 by BYD makes the practical application of solid-state batteries in the Chinese automotive industry increasingly tangible. While initial applications are expected in high-performance and premium EV segments, mass production initiatives are projected to drive down costs, facilitating wider adoption across the EV spectrum. This competitive landscape is poised to further propel the development of the EV market and accelerate innovation in battery technology globally.

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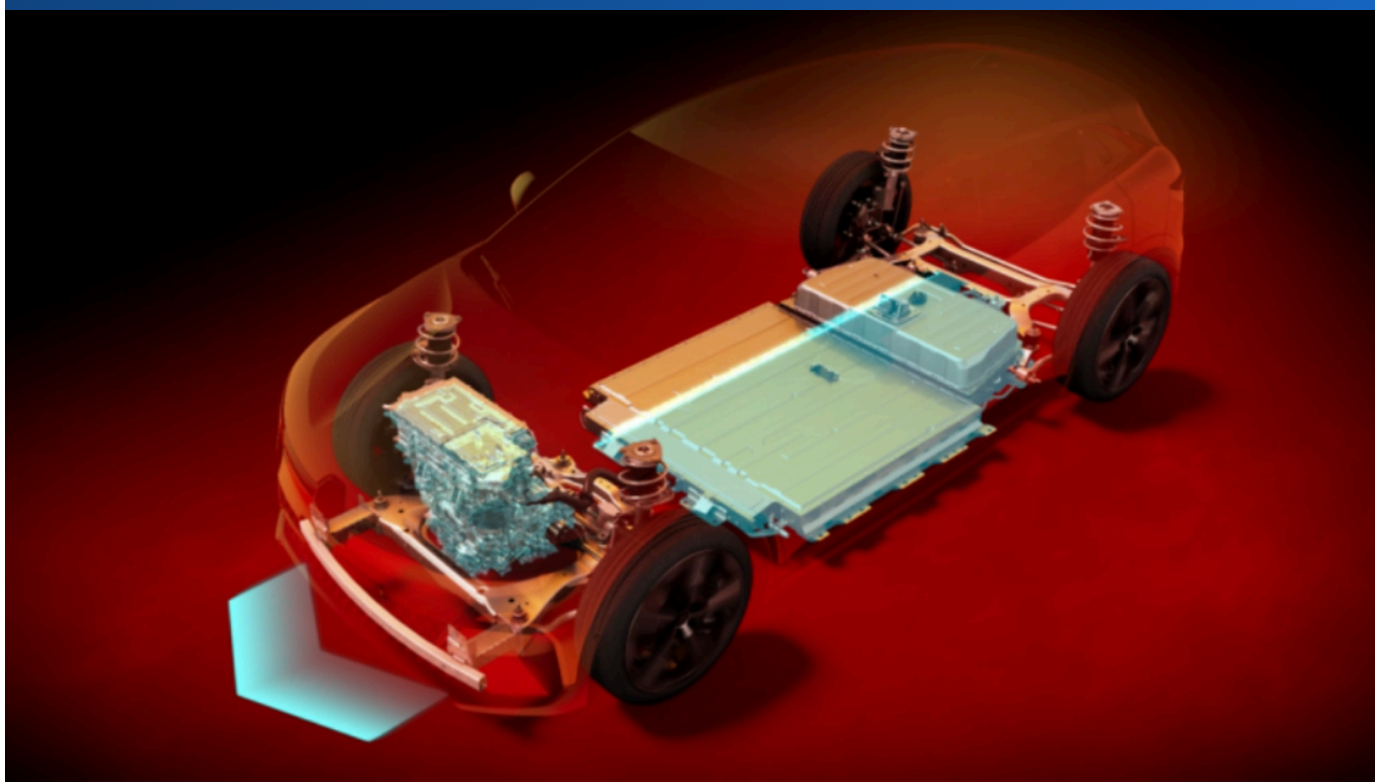
Source:

[https://www.reddit.com/r/Sino/comments/1tr46cm/byd\\_files\\_new\\_sulfide\\_solidstate\\_battery\\_patent/?tl=nl](https://www.reddit.com/r/Sino/comments/1tr46cm/byd_files_new_sulfide_solidstate_battery_patent/?tl=nl)

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Semi-Solid-State Batteries to Boost Automaker Profitability: China Advances National Standards, 15 GWh+ Shipments Forecasted by 2026

Published June 04, 2026 Gasgoo / Industry Analysis China



## OVERVIEW

As the industrialization of all-solid-state batteries faces delays, semi-solid-state batteries are gaining renewed attention as a pragmatic solution balancing energy density, cost, and safety. China is actively developing national standards for solid-state batteries, with companies like Qingtao Energy, in partnership with SAIC, developing semi-solid-state batteries demonstrating over 3,000 cycles and improved discharge performance at  $-20^{\circ}\text{C}$ . These advancements are projected to drive China's domestic semi-solid-state battery shipments past 15 GWh in 2026, helping address automakers' profitability challenges.

## IN DEPTH

### Key Findings

With the industrialization of full solid-state batteries facing ongoing challenges, semi-solid-state batteries are emerging as a compelling solution to automakers' profitability challenges, balancing energy density, cost, and safety. China is actively developing national standards for solid-state batteries, and companies like Qingtao Energy, in collaboration with SAIC, have developed semi-solid-state batteries with a lifespan exceeding 3,000 cycles and enhanced discharge performance at  $-20^{\circ}\text{C}$ . This technological progress is projected to lead to over 15 GWh of domestic semi-solid-state battery shipments in China by 2026.

### Technical / Clinical Details

Semi-solid-state batteries represent an intermediate technology, replacing a portion of the liquid electrolyte with solid materials. This approach offers a dual advantage of higher energy density and improved safety compared to traditional liquid lithium-ion batteries, while presenting fewer manufacturing and technical hurdles than full solid-state solutions. Qingtao Energy's developed semi-solid-state battery demonstrates robust performance in extreme cold conditions ( $-20^{\circ}\text{C}$ ) and has proven durability beyond 3,000 cycles. These characteristics directly address critical EV challenges related to low-temperature efficiency and long-term reliability requirements for extended usage periods.

### Background & Context

The rapid expansion of the EV market has made battery performance, safety, and cost crucial competitive factors for automakers. While full solid-state batteries are a long-term goal, their complex manufacturing processes and high costs have been barriers to widespread adoption. In this context, semi-solid-state batteries have emerged as a practical alternative, offering performance improvements and enhanced safety relatively quickly, often leveraging existing production infrastructure. The Chinese government's initiative to establish national standards is expected to further promote the adoption of semi-solid-state battery technology and foster healthy market development.

## Strategic Significance & Outlook

By balancing improved energy density with cost reduction, semi-solid-state batteries are becoming a vital tool for automakers to enhance EV competitiveness and secure profitability. The forecast of over 15 GWh in annual shipments for the Chinese market indicates that this technology has already entered a practical application phase and is rapidly expanding its market presence. Continued technological refinement and cost optimization are expected to establish semi-solid-state batteries as a significant mainstream option in the EV market, serving as an important bridge towards the eventual widespread adoption of full solid-state batteries.

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Source: <https://autonews.gasgoo.com/articles/ev/could-semi-solid-state-batteries-be-the-savior-to-automakers-profitability-challenges-2062518626878574592>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# CATL Confirms 2026 Mass Production of Sodium-Ion Batteries, Targeting 600km Range and -40°C Operation for New EV Market Dynamics

Published June 02, 2026   Battery Energy Storage System   China



## OVERVIEW

CATL, the world's largest battery maker, has confirmed mass production of sodium-ion batteries will commence in 2026, having resolved key manufacturing bottlenecks. Its 'Naxtra' sodium-ion batteries aim for a 600km range with energy densities up to 175 Wh/kg. Critically, these batteries function effectively at -40°C, positioning them as a short-term cost-breakthrough for affordable EVs and stationary energy storage, particularly in cold climates like Canada.

### Key Findings

CATL, the world's largest battery manufacturer, has officially announced that it will commence mass production of sodium-ion batteries in 2026. Wu Kai, the company's chief scientist, confirmed that major manufacturing bottlenecks, previously impediments to mass production, have been resolved, signaling a new dynamic for the EV and energy storage markets.

### Technical / Clinical Details

CATL's 'Naxtra' sodium-ion batteries achieve an energy density of up to 175 Wh/kg, offering performance comparable to or near existing lithium iron phosphate (LFP) batteries, potentially at a 30% lower cost. A key feature of these batteries is their ability to function effectively in extreme cold temperatures down to -40°C, making them a revolutionary technology for electric vehicles (EVs) and stationary energy storage systems in cold regions like Canada. CATL is targeting a 600km driving range, with plans for deployment in passenger cars and commercial vehicle fleets.

### Background & Context

While many companies are pursuing solid-state batteries as a long-term goal, CATL is positioning sodium-ion batteries as a practical, short-term solution for cost efficiency and performance improvement. Sodium is more abundant and cheaper than lithium, which helps reduce raw material supply chain risks and lowers overall battery costs. CATL predicts that sodium-ion batteries could replace 30-40% of the existing battery market, potentially becoming a game-changer in the affordable EV segment. Concurrently, CATL continues its long-term research into high-density lithium-air batteries, preparing for future technological advancements.

## Strategic Significance & Outlook

The commencement of mass production in 2026 signifies that sodium-ion batteries will play a crucial role in the EV and energy storage markets. Their performance in cold climates and lower cost will enable them to penetrate market segments not fully addressed by existing lithium-ion batteries. This development will accelerate the diversification of battery technologies and the transition towards more sustainable and affordable energy solutions. CATL's strategy demonstrates a commitment to providing optimal battery solutions tailored to market needs, rather than solely relying on a single technology.

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Source: <https://www.battery-energy-storage-system.com/news/catl-sodium-ion-cell-mass-production-2026.html>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Nissan, Gelion, and Oxford University Partner to Develop Next-Gen Solid-State Lithium-Sulfur EV Batteries Targeting Cost Parity with Chinese Rivals by 2028

Published June 04, 2026   Electrek   Japan



## OVERVIEW

Nissan has launched a three-year collaborative research project, 'CoRe-SoLiS,' with Gelion and Oxford University, focusing on developing next-generation solid-state lithium-sulfur batteries for electric vehicles (EVs). This partnership integrates Gelion's nano-encapsulated sulfur cathode technology, Nissan's solid-state battery expertise, and Oxford's advanced anode materials development. The goal is to deliver high energy density, durable, safe, and fast-charging EV battery packs by 2028 that can compete on cost with Chinese-manufactured batteries.

## IN DEPTH

### Key Findings

Nissan, in collaboration with battery technology firm Gelion and Oxford University, has initiated a three-year joint research project dubbed 'CoRe-SoLiS' to develop next-generation solid-state lithium-sulfur batteries for electric vehicles (EVs). This strategic partnership aims to achieve a breakthrough in high-performance, high-safety, and cost-effective EV batteries, with Nissan targeting the launch of its first EV featuring these solid-state batteries by 2028, specifically designed to be competitive on cost with Chinese-made batteries.

### Technical / Clinical Details

The 'CoRe-SoLiS' project leverages the distinct strengths of each partner. Gelion contributes its innovative nano-encapsulated sulfur (NES™) cathode active material technology, which is crucial for enhancing the energy density and stability of lithium-sulfur batteries. Nissan brings its specialized expertise in solid-state battery development and mass production know-how, honed since the opening of its dedicated EV solid-state battery production line in January 2025. Oxford University supports the project with its cutting-edge research in advanced anode materials and cell integration techniques. This combined effort seeks to develop battery packs that feature high energy density, exceptional durability, inherent safety, and rapid charging capabilities.

### Background & Context

In the fiercely competitive electric vehicle market, battery performance and cost are pivotal factors determining an automaker's competitiveness. Solid-state batteries, offering superior energy density and safety compared to conventional liquid electrolyte lithium-ion batteries, are considered the most promising candidate for future EV power sources. Nissan has been an early and significant investor in solid-state battery development, and this international academic-industrial collaboration is a strategic move to accelerate technological progress and secure a competitive edge in the global market. The ability to achieve cost parity with Chinese battery manufacturers, who currently hold a significant market advantage, is a critical objective for Nissan.

## Strategic Significance & Outlook

Should this project succeed, Nissan is expected to introduce EVs equipped with solid-state batteries to the market by 2028, establishing a foundation to compete on cost with Chinese battery manufacturers. This would mark a crucial milestone in Nissan's EV strategy and could catalyze broader technological innovation and adoption across the entire EV market. The synergy from this collaboration is anticipated to maximize the development of next-generation batteries that balance both safety and performance, paving the way for their practical application.

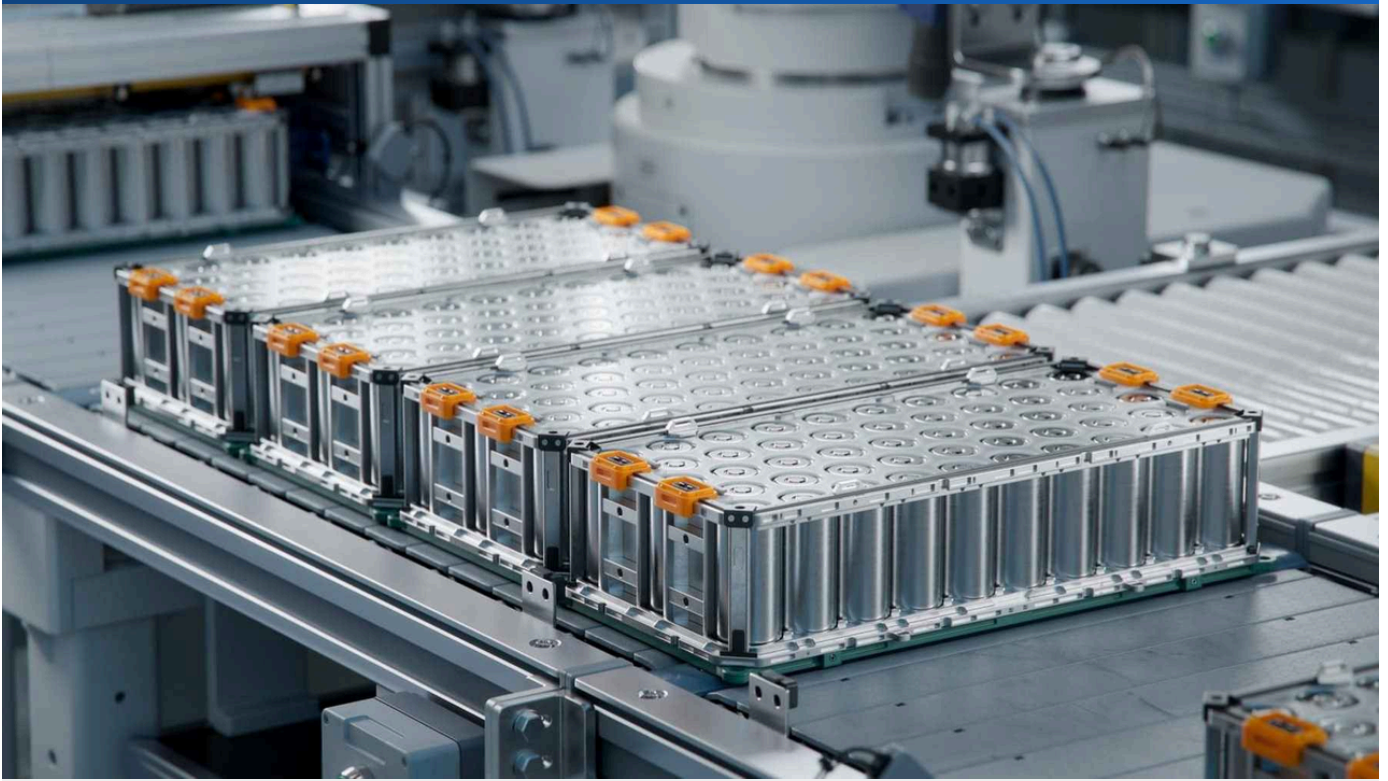
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Source: <https://electrek.co/2026/06/04/nissan-solid-state-ev-battery-project-aims-for-cheaper-than-china/>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Chinese Lab Reports Solid-State Lithium-Metal Battery with 451.5 Wh/kg and 3-Minute Charge, Maintaining 81.9% Capacity After 700 Cycles at 20C

Published May 29, 2026   Autonocion.com   China



## OVERVIEW

A Chinese laboratory has unveiled a solid-state lithium-metal battery boasting an impressive energy density of 451.5 Wh/kg and an ultra-fast charging time of approximately 3 minutes. This innovative cell maintains 81.9% of its initial capacity after 700 cycles at a 20C charging rate, representing more than double the performance of current lithium-ion batteries. This superior performance is attributed to a unique mechanism involving the formation of a lithium-fluoride-rich layer at the electrode interface, effectively suppressing dendrite growth.

## IN DEPTH

### Key Findings

A research institution in China has successfully developed a solid-state lithium-metal battery that achieves an exceptionally high energy density of 451.5 Wh/kg and an ultra-fast charging time of approximately 3 minutes. This breakthrough cell demonstrates remarkable performance, retaining 81.9% of its initial capacity after 700 cycles at an aggressive 20C charging rate, which signifies more than double the performance of current state-of-the-art lithium-ion batteries.

### Technical / Clinical Details

This groundbreaking performance is achieved through the deliberate formation of a specific lithium-fluoride (LiF)-rich layer at the electrode interface. This LiF layer effectively suppresses the growth of lithium dendrites, which are branched metallic structures that are a major challenge in lithium-metal batteries, often leading to short circuits and rapid capacity degradation. By mitigating dendrite formation, the layer ensures enhanced battery safety and significantly extended cycle life, allowing the battery to maintain high efficiency even under ultra-fast charging conditions.

### Background & Context

The increasing demand for electric vehicles (EVs) and portable electronic devices necessitates battery technologies with higher energy density, faster charging capabilities, and improved safety. Lithium-metal batteries, in theory, offer significantly higher energy density than existing lithium-ion batteries, but the persistent problem of dendrite formation has hindered their practical application. This Chinese research provides a promising solution to this fundamental challenge, potentially marking a critical milestone in next-generation battery development.

## Strategic Significance & Outlook

The achievements with this solid-state lithium-metal battery have the potential to dramatically extend EV driving ranges and drastically reduce charging times. If these research findings can be successfully translated into practical applications, they could revolutionize the EV market, fundamentally addressing consumer concerns about 'range anxiety' and 'charging duration.' Future efforts will focus on scaling up this laboratory success to mass production levels, including developing efficient manufacturing processes and reducing costs. This technology holds the potential to herald the end of the lithium-ion battery era and usher in a new age of battery innovation.

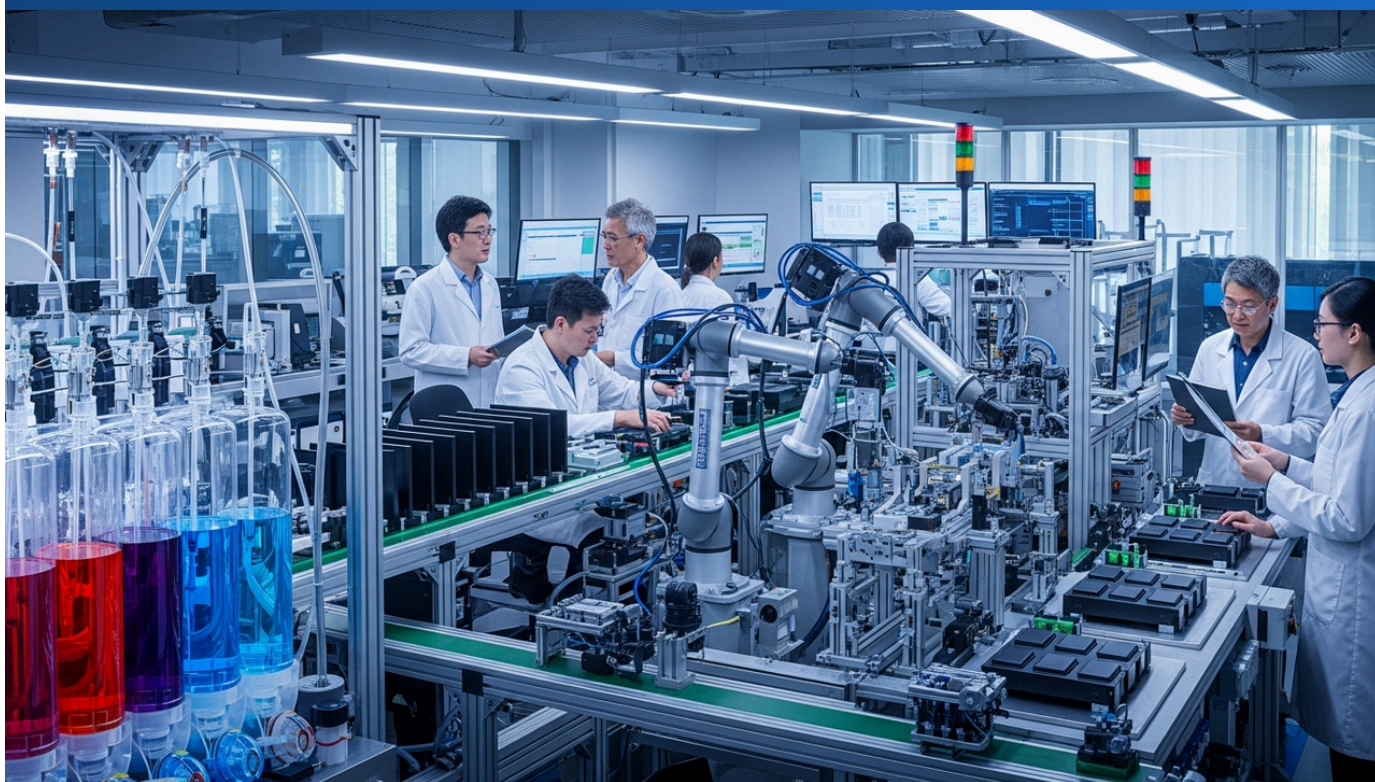
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Source: <https://www.autonocion.com/us/lithium-metal-battery-double-energy/>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# U.S. DOE Boosts Collaboration for Flow and Solid-State Lithium Battery Manufacturing Scale-Up: National Labs to Partner with Industry

Published May 29, 2026   Department of Energy   USA



## OVERVIEW

The U.S. Department of Energy (DOE) is intensifying collaboration between national laboratories and industry to accelerate the manufacturing scale-up and validation of flow batteries and solid-state lithium batteries. National labs offer diverse R&D capabilities, including slot-die coating, tape casting, high-speed sintering, lithium deposition, interfacial engineering, and cell manufacturing, all critical for solid-state battery development. This initiative aims to advance the commercialization of next-generation battery technologies and strengthen the domestic manufacturing base.

## IN DEPTH

### Key Findings

The U.S. Department of Energy (DOE) has announced an expanded initiative to strengthen collaboration between national laboratories and industry, aimed at accelerating the manufacturing scale-up, verification, and validation of flow batteries and solid-state lithium batteries. This effort is designed to propel the commercialization of next-generation battery technologies and fortify the domestic manufacturing infrastructure.

### Technical / Clinical Details

National laboratories will provide extensive expertise and facilities for the synthesis, processing, and evaluation of solid electrolytes, electrodes, and complete cells. Specific technical capabilities include precision material deposition techniques such as slot-die coating, tape casting, and screen printing, along with advanced thermal processing like ceramic processing and high-speed sintering. Furthermore, the labs offer specialized expertise in areas unique to solid-state batteries, such as lithium deposition and interfacial engineering. Through these resources, industry partners can receive comprehensive support ranging from prototyping innovative battery designs to performance benchmarking, reliability assessment, and manufacturing process optimization. Collaborative Research and Development Agreements (CRADAs) will facilitate industry access to the national labs' advanced technological resources and expertise, thereby expediting their path to commercialization.

### Background & Context

Strengthening domestic manufacturing capabilities for clean energy technologies, particularly batteries, is a top priority for the U.S. government, driven by concerns over climate change and economic security. Solid-state batteries are highly anticipated as a next-generation technology for applications in electric vehicles (EVs) and grid-scale energy storage, offering advantages in safety, energy density, and longevity over conventional liquid electrolyte lithium-ion batteries. The DOE's announcement represents a critical policy support measure aimed at resolving bottlenecks in the transition from research and development to manufacturing and mass production, ultimately enhancing the competitiveness of the U.S. battery industry.

## Strategic Significance & Outlook

The enhanced collaboration between national laboratories and industry is essential for the rapid commercialization of next-generation battery technologies, including solid-state batteries. This cooperation is expected to lead to the overcoming of technical barriers, reduction of manufacturing costs, and strengthening of supply chains.

Ultimately, this will accelerate the transition to a sustainable energy system and establish a foundation for the U.S. to play a leading role in global battery technology innovation and manufacturing.

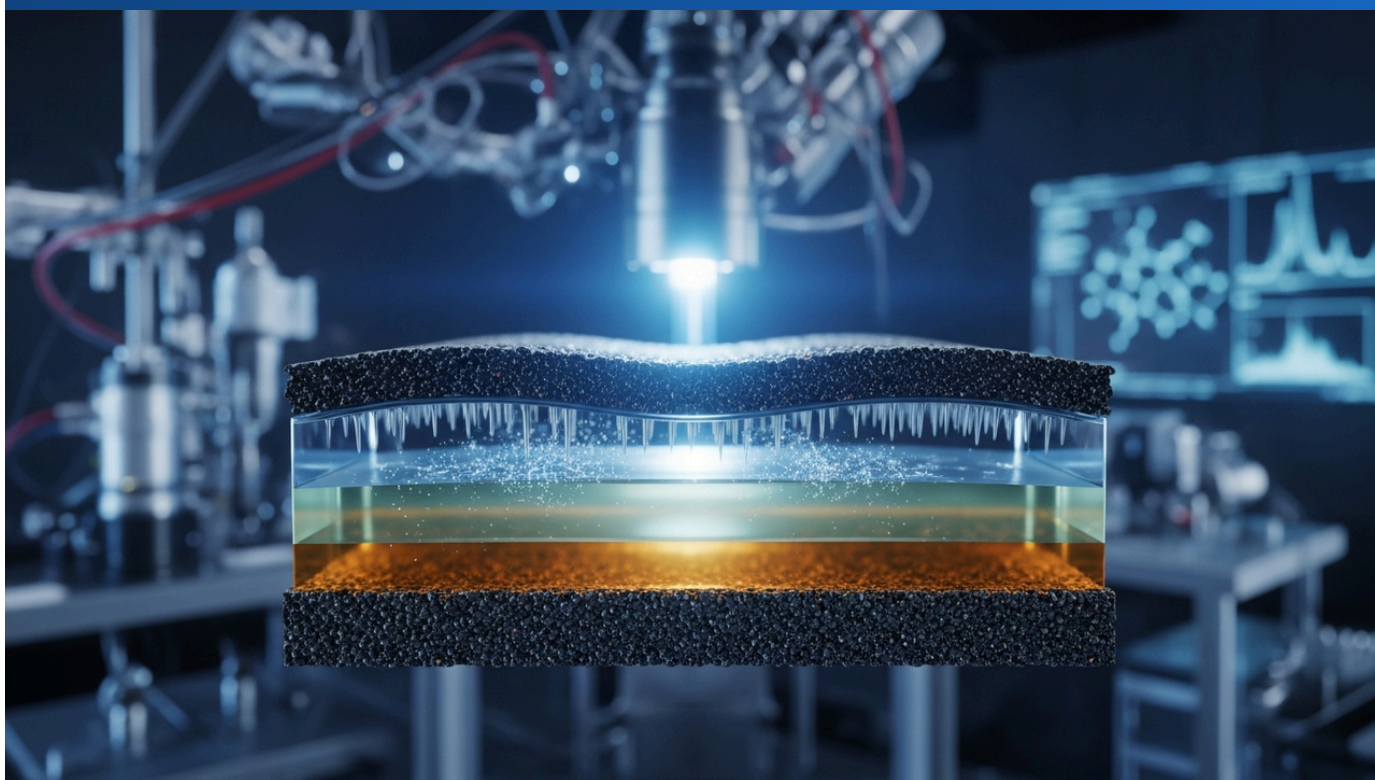
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Source: <https://www.energy.gov/cmei/ammto/fy-2023-battery-manufacturing-lab-call-national-lab-capabilities-and-contacts>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# ResearchGate Details Lithium Dendrite Suppression and Solid Electrolyte Role in All-Solid-State Lithium-Ion Batteries

Published June 01, 2026 ResearchGate International



## OVERVIEW

This research emphasizes the superior safety, stability, and energy density of all-solid-state lithium-ion batteries while detailing the challenges and solutions for lithium dendrite growth in lithium-metal batteries. It highlights that embedding nanofiller additives within solid composite electrolytes is effective for suppressing dendrite growth. The study clarifies that the mechanical properties of solid electrolytes play a crucial role in preventing dendrite formation, reducing electrode-electrolyte interfacial resistance, and avoiding crack propagation.

### Key Findings

All-solid-state lithium-ion batteries are highlighted for their superior advantages in safety, stability, and energy density compared to conventional batteries employing flammable liquid electrolytes. This study specifically demonstrates the effectiveness of embedding nanofiller additives within solid composite electrolytes as a strategy to suppress lithium dendrite growth, a major challenge in lithium-metal battery development.

### Technical / Clinical Details

The formation of lithium dendrites poses a severe problem, leading to short circuits and premature battery degradation. This research clarifies that the mechanical properties of solid electrolytes are critically important for inhibiting this dendrite growth. Specifically, the high mechanical strength of solid electrolytes acts as a physical barrier against the branched growth of lithium metal. Furthermore, the introduction of nanofiller additives allows for maintaining the ionic conductivity of the solid electrolyte while simultaneously increasing its resistance to dendrite penetration. This approach effectively reduces the electrode-electrolyte interfacial resistance and prevents crack propagation within the battery, thereby contributing to significant improvements in cycle life and safety.

### Background & Context

With the widespread adoption of electric vehicles (EVs) and portable electronic devices, there is a strong demand for safer and higher-performing battery technologies. All-solid-state batteries, due to their inherent safety and high energy density potential, are considered the most promising candidates for next-generation battery technology. However, the issue of lithium dendrites has been a major impediment to the commercialization of all-solid-state batteries, especially those utilizing lithium metal anodes. This research presents one of the significant solutions to this long-standing problem, offering crucial insights that could accelerate the commercialization of all-solid-state batteries.

## Strategic Significance & Outlook

The optimization of solid electrolyte mechanical properties and nanofiller additives indicates a vital direction for achieving dendrite-free, long-life all-solid-state lithium-metal batteries. Future research will need to explore the applicability of this approach to different solid electrolyte materials (e.g., sulfide, oxide, polymer systems) and its scalability to larger cell formats. These advancements hold the potential to dramatically extend the driving range of EVs, reduce charging times, and exponentially enhance battery safety, marking a new era in energy storage.

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Source:

[https://www.researchgate.net/publication/405544243\\_Kinetic\\_Monte\\_Carlo\\_simulations\\_for\\_suppressing\\_dendri\\_ion\\_batteries](https://www.researchgate.net/publication/405544243_Kinetic_Monte_Carlo_simulations_for_suppressing_dendri_ion_batteries)

Collected: June 06, 2026 | Automated Research System (Gemini API)

# AppleInsider Unveils 2026 iPhone MagSafe Solid-State Batteries: Emphasizing Safety, High Density, and Extended Lifespan

Published June 04, 2026 AppleInsider USA



## OVERVIEW

AppleInsider has reported on the advent of solid-state battery technology for 2026 iPhone MagSafe accessories. This new battery chemistry significantly enhances safety by eliminating liquid electrolytes, surpassing conventional lithium-ion designs. It also offers potential for higher energy density, longer lifespan, and faster charging, making it an optimal solution for the compact form factors of iPhones and MagSafe devices.

## IN DEPTH

### Key Findings

AppleInsider has reported on the integration of solid-state battery technology into MagSafe batteries for the 2026 iPhone lineup. This next-generation battery innovation achieves a significant leap in safety by completely eliminating traditional liquid electrolytes. Furthermore, it promises the potential for higher energy density in compact form factors, extended lifespan, and accelerated charging capabilities, positioning it as an ideal solution for consumer electronics, particularly for iPhones and related accessories.

### Technical / Clinical Details

Solid-state batteries fundamentally enhance safety by replacing liquid electrolytes with solid counterparts, thereby eliminating the inherent risks of leakage and thermal runaway. This solid nature also provides greater flexibility in cell design, enabling higher energy densities to be packed into more compact physical footprints. For small devices like the iPhone, this translates directly to expectations of longer battery life and reduced device weight. Moreover, the inherent stability of solid interfaces is anticipated to improve cycle life and mitigate degradation during rapid charging cycles.

### Background & Context

As smartphones evolve, battery performance remains a critical factor dictating user experience. While high capacity and rapid charging are essential, safety concerns, such as fire incidents, have always been a lingering issue. Solid-state battery technology has been under extensive research and development for years, poised to resolve these challenges comprehensively. Its combination with wireless charging technologies like MagSafe offers new value to users in terms of both convenience and safety. The introduction of solid-state batteries in the consumer electronics sector is seen as an indicator that practical application in small devices may accelerate even ahead of their broader adoption in the automotive industry.

## Strategic Significance & Outlook

The advent of MagSafe solid-state batteries for the iPhone marks a significant turning point in battery technology within the consumer electronics industry. Enhanced safety will bolster user confidence, while increased energy density and extended lifespan will elevate device performance to the next level. This technology is expected to propagate to other portable electronic devices and could eventually accelerate adoption in larger applications, such as electric vehicles. This innovation represents a crucial step in shaping the future of mobile devices.

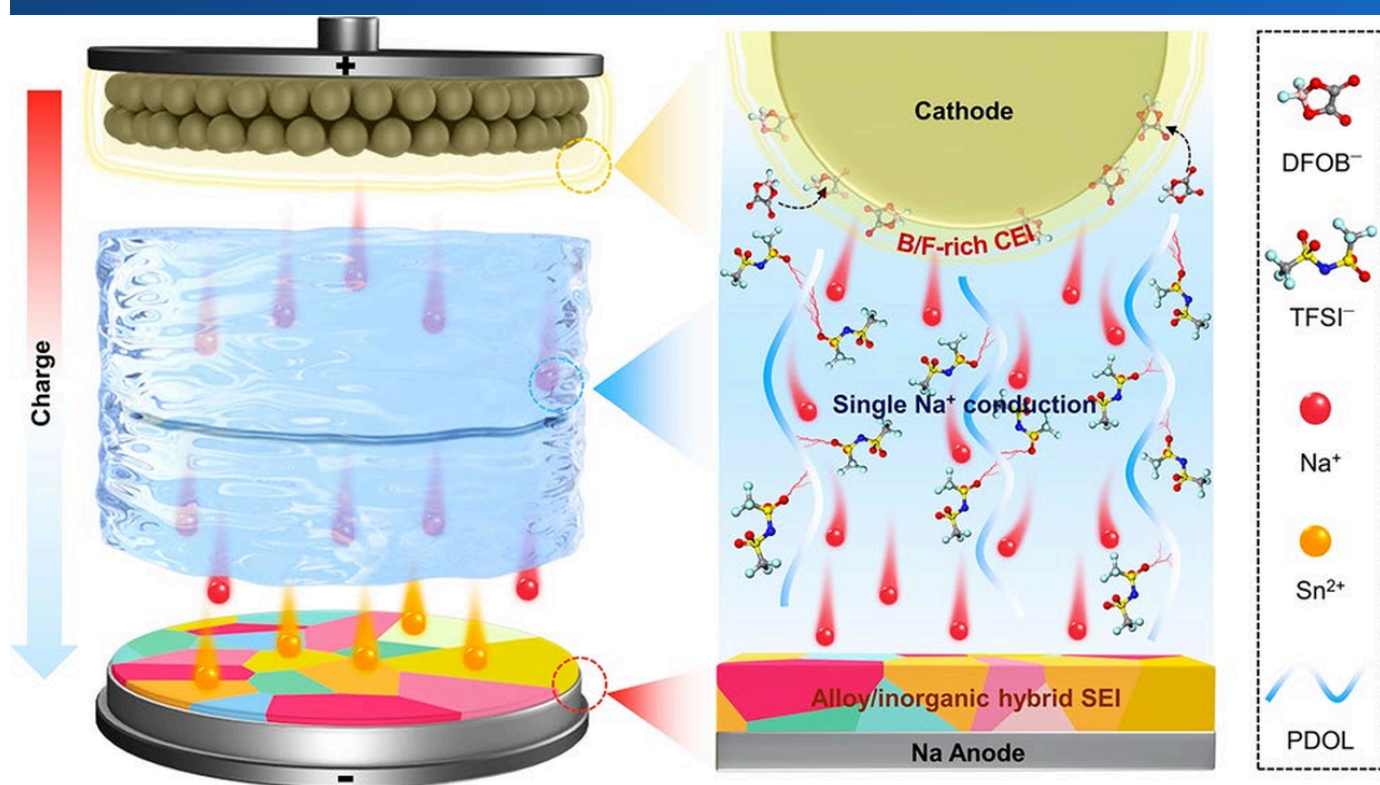
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Source: <https://appleinsider.com/inside/iphone/best/the-best-solid-state-magsafe-batteries-for-your-iphone-in-2026>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Dual Interlocked Mediators Enable Ultrafast-Charging, Long-Life Sodium Metal Batteries with Quasi-Solid-State Electrolytes

Published June 03, 2026 Research Communities International



## OVERVIEW

This research introduces quasi-solid-state electrolytes (QSEs) utilizing dual interlocked mediators to significantly enhance Na<sup>+</sup> transport and interfacial chemistry for ultrafast-charging, long-life sodium metal batteries. Employing cationic Sn<sup>2+</sup> salts and anionic difluoro(oxalato)borate (DFOB<sup>-</sup>) salts, these QSEs achieved over 6000 hours of stability in symmetric cells. Furthermore, full cells maintained 90% capacity for over 2000 cycles at an ultra-fast 15C charging rate.

### Key Findings

In a groundbreaking development for sodium metal batteries, a quasi-solid-state electrolyte (QSE) system incorporating dual interlocked mediators has been developed. This novel electrolyte significantly improves Na<sup>+</sup> ion transport and electrode interfacial chemistry, paving the way for sodium metal batteries that offer both ultrafast charging capabilities and extended cycle life.

### Technical / Clinical Details

The developed QSEs feature dual interlocked mediators, specifically a cationic Sn<sup>2+</sup> salt and an anionic difluoro(oxalato)borate (DFOB<sup>-</sup>) salt. This unique combination enabled symmetric cells (Li|QSE|Li) to demonstrate remarkable stability for over 6000 hours. Furthermore, full cells (Li||Na<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>) successfully maintained 90% of their capacity for over 2000 cycles at an ultra-fast charging rate of 15C. This represents a significant advancement in addressing the conventional trade-off between charging speed and cycle life in sodium batteries. The QSEs also exhibit high ionic conductivity at room temperature, indicating substantial progress towards practical application.

### Background & Context

Sodium-ion batteries are gaining considerable attention as a primary alternative to lithium-ion batteries due to the abundance and low cost of sodium resources. However, similar to lithium-metal batteries, sodium metal batteries have faced challenges related to dendrite formation, impacting both safety and cycle life. The QSEs developed in this study offer an effective solution to these issues, potentially accelerating the adoption of sodium metal batteries, particularly in applications demanding ultrafast charging, such as electric vehicles (EVs) and grid-scale energy storage systems.

#### Strategic Significance & Outlook

The QSEs incorporating dual interlocked mediators have the potential to significantly enhance the performance of sodium metal batteries, making them a competitive option in the next-generation battery market. Future efforts will focus on scaling up this technology, optimizing manufacturing processes, and reducing costs for commercialization. This research is expected to contribute substantially to the diversification of energy storage technologies and the transition towards a sustainable society.

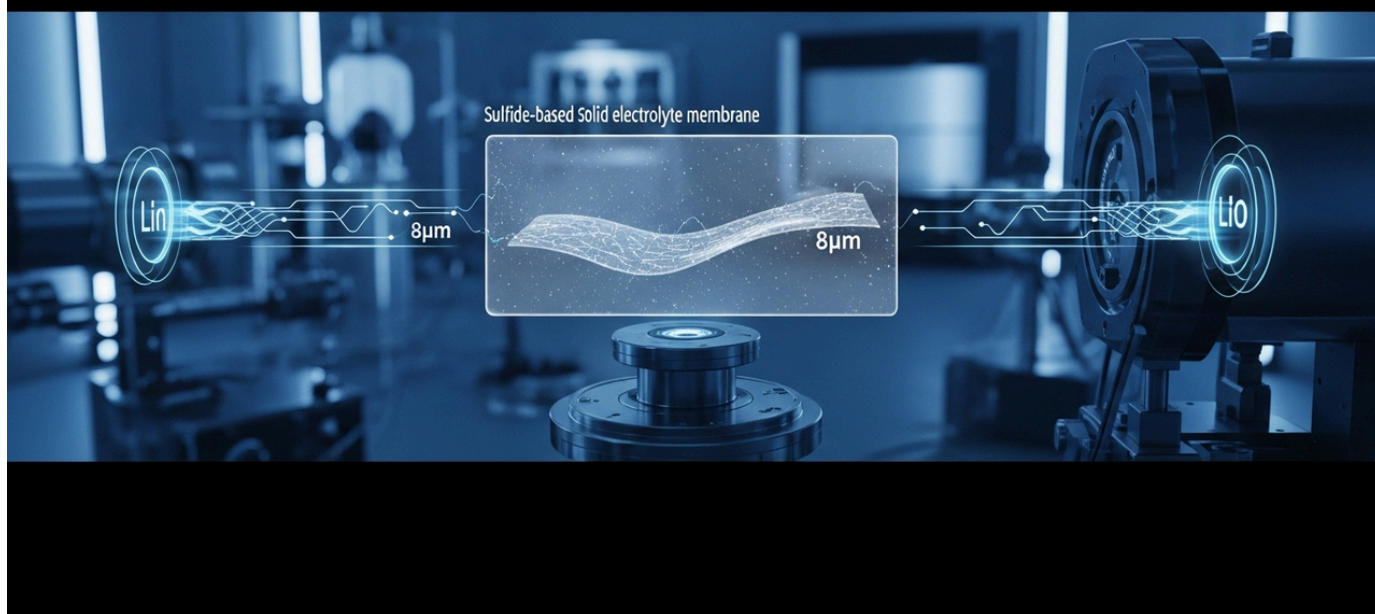
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Source: <https://communities.springernature.com/posts/dual-interlocked-mediators-enable-single-ion-conducting-quasi-solid-state-electrolytes-for-ultrafast-charging-long-life-sodium-metal-batteries>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Sulfide Solid Electrolyte Film Achieves 86.3% Capacity Retention After 250 Cycles with 8 $\mu$ m Ultrathin Layer

Published June 03, 2026 ResearchGate International



## OVERVIEW

This study reports that an 8 $\mu$ m-thick sulfide solid electrolyte film ( $\text{Li}_{9.88}\text{GeP}_{1.96}\text{Sb}_{0.04}\text{S}_{11.88}\text{Cl}_{0.12}$ ), fabricated via a wet-coating method, demonstrates excellent ionic conductivity of 1.9  $\text{mS cm}^{-1}$  at 25°C. A solid-state lithium battery incorporating this ultrathin film with  $\text{LiCoO}_2$  achieved a high capacity retention of 86.3% after 250 cycles at 60°C and 0.1 C, with an initial reversible capacity of 125.6  $\text{mAh g}^{-1}$ . This work presents a new strategy for developing ultrathin, high-strength, and safe solid electrolytes.

### Key Findings

This research highlights the successful fabrication of an ultrathin (8 $\mu\text{m}$ -thick) sulfide solid electrolyte film, specifically  $\text{Li}_{9.88}\text{GeP}_{1.96}\text{Sb}_{0.04}\text{S}_{11.88}\text{Cl}_{0.12}$ , using a wet-coating method. The film exhibits outstanding electrochemical performance, achieving a high ionic conductivity of  $1.9 \text{ mS cm}^{-1}$  at  $25^\circ\text{C}$ . A solid-state lithium battery employing this film with a  $\text{LiCoO}_2$  cathode demonstrated remarkable stability, maintaining 86.3% capacity retention after 250 cycles at  $60^\circ\text{C}$  and a 0.1 C rate.

### Technical / Clinical Details

Sulfide solid electrolytes are among the most promising candidates for all-solid-state batteries due to their high room-temperature ionic conductivity and excellent electrochemical stability. The wet-coating method utilized in this study offers a potential pathway for cost-effective manufacturing of uniform, ultrathin electrolyte membranes. The 8 $\mu\text{m}$ -thick  $\text{Li}_{9.88}\text{GeP}_{1.96}\text{Sb}_{0.04}\text{S}_{11.88}\text{Cl}_{0.12}$  film achieved an ionic conductivity of  $1.9 \text{ mS cm}^{-1}$  at  $25^\circ\text{C}$ , a highly practical value that enables rapid  $\text{Li}^+$  ion transport. When integrated into an all-solid-state battery with a  $\text{LiCoO}_2$  cathode and lithium metal anode, the cell recorded an initial reversible capacity of  $125.6 \text{ mAh g}^{-1}$  and maintained an impressive 86.3% capacity retention after 250 cycles under  $60^\circ\text{C}$  and 0.1 C charge/discharge conditions. This represents a significant advancement towards realizing ultrathin solid electrolytes that are both high in strength and inherently safe.

### Background & Context

The increasing demand for electric vehicles (EVs) and portable electronic devices necessitates battery technologies that offer superior safety, higher energy density, and extended lifespan. All-solid-state batteries are anticipated to address the risks of leakage and fire associated with conventional liquid lithium-ion batteries, positioning them as a key next-generation technology. However, challenges related to solid electrolyte manufacturing costs, interfacial resistance, and mechanical strength have been barriers to their widespread commercialization. This research presents a promising strategy for overcoming these challenges by achieving both ultrathin film formation and high cycle stability.

## Strategic Significance & Outlook

The development of ultrathin sulfide solid electrolyte films via the wet-coating method holds the potential to simplify manufacturing processes and reduce costs for all-solid-state batteries. Future research will focus on further extending cycle life and scaling up these technologies to larger cell formats, which could accelerate their practical application in EVs and stationary energy storage systems. This achievement represents a critical step towards the realization of high-performance and safe next-generation battery technologies.

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Source:

[https://www.researchgate.net/publication/405620300\\_Investigation\\_of\\_mechanical\\_and\\_viscoelastic\\_behavior\\_o](https://www.researchgate.net/publication/405620300_Investigation_of_mechanical_and_viscoelastic_behavior_o)

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Garnet-Type $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ Solid Electrolyte Shows Enhanced Interfacial Contact and Stability: Composite Achieves Over 1000 Hours of Stable Battery Operation

Published May 29, 2026 MDPI (Materials journal) International



Enhanced interfacial contact and stability improvement  
Garnet-type  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  composite Electrolytes  
Over 1000 hours of stable operation

## OVERVIEW

This review summarizes research progress on garnet-type  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  (LLZO) solid electrolytes, highlighting their high ionic conductivity ( $\sim 10^{-3}$  S/cm) and stability against lithium metal anodes. Addressing issues of poor interfacial contact and high sintering temperatures, a composite solid electrolyte combining Ga/Ta co-doped LLZO with PEO-LiTFSI polymer achieved an ionic conductivity of  $4.35 \times 10^{-4}$  S/cm at  $60^\circ\text{C}$ , demonstrating over 1000 hours of stable battery operation.

## IN DEPTH

### Key Findings

A recent review details significant research progress on garnet-type  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  (LLZO) solid electrolytes, highlighting their promising properties and strategies to overcome existing challenges. The review acknowledges LLZO's high ionic conductivity (approximately  $10^{-3}$  S/cm) and excellent stability against lithium metal anodes, while also pointing out practical hurdles such as poor interfacial contact and high sintering temperatures that impede commercialization.

### Technical / Clinical Details

The review outlines multiple strategies to further enhance LLZO performance, including optimizing  $\text{Li}^+$  conduction channels, incorporating sintering aids for improved densification, creating composites with polymer electrolytes, and optimizing the interfacial contact between electrodes and electrolytes. Of particular note is a high-performance organic-inorganic composite solid electrolyte that combines Ga/Ta co-doped LLZO with a PEO-LiTFSI polymer. This composite electrolyte achieved a high ionic conductivity of  $4.35 \times 10^{-4}$  S/cm at  $60^\circ\text{C}$  and demonstrated over 1000 hours of stable battery operation in all-solid-state lithium batteries. Furthermore, a  $\text{LiFePO}_4\|\text{Li}$  all-solid-state battery utilizing this composite maintained a high capacity retention of 96.5% after 100 cycles at  $60^\circ\text{C}$ , indicating substantial improvements in  $\text{Li}^+$  ion transport and interfacial stability.

### Background & Context

All-solid-state batteries are considered the prime candidate for next-generation batteries for electric vehicles (EVs) and stationary energy storage systems, owing to their advantages in safety (non-flammability), energy density, and long lifespan compared to conventional liquid electrolyte lithium-ion batteries. LLZO has been extensively researched as one of the most promising solid electrolyte materials due to its excellent ionic conductivity and chemical stability. However, challenges such as interfacial resistance with lithium metal anodes and costly manufacturing processes have been major barriers to its commercialization. The reported research progress provides concrete pathways for resolving these issues.

## Strategic Significance & Outlook

LLZO-based composite solid electrolytes, by combining high performance with stability, hold significant potential to contribute to the realization of high-performance and safe all-solid-state batteries. Future research will focus on further optimizing manufacturing processes, reducing costs, and scaling up for large-scale production. This progress is expected to accelerate the commercialization of all-solid-state batteries, bringing about a new paradigm shift in the EV and energy storage markets.

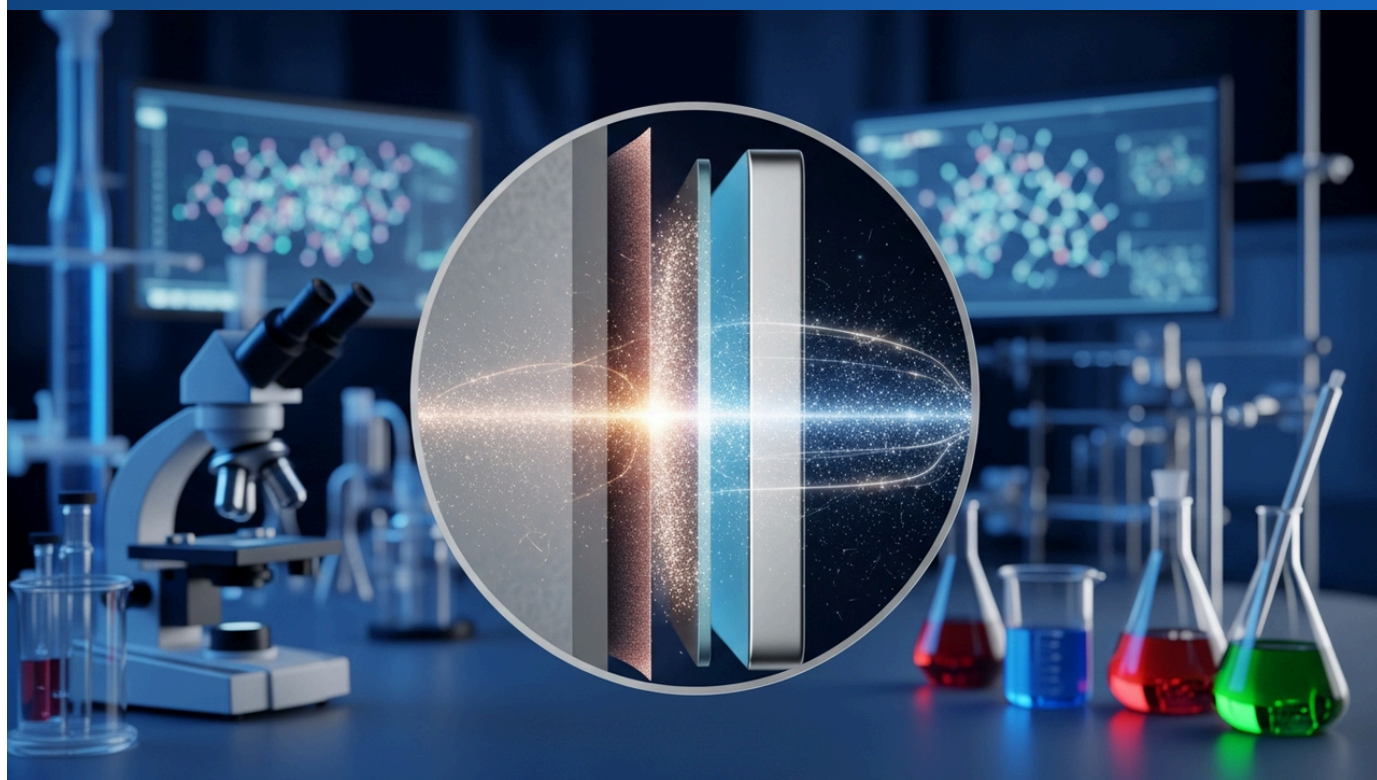
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Source: <https://www.mdpi.com/2304-6740/14/6/148>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Asymmetric Composite Solid Electrolytes Dramatically Boost Interfacial Stability and Room-Temperature Ionic Conductivity in All-Solid-State Lithium Metal Batteries

Published May 29, 2026 ACS Applied Energy Materials - ACS Publications International



## OVERVIEW

This research developed an asymmetric composite solid electrolyte (DDL) that significantly enhances ionic conductivity and interfacial stability in all-solid-state lithium metal batteries. The DDL electrolyte, incorporating LiDFOB, LiFSI, and NASICON-type LATP fillers within a PVDF-HFP matrix, exhibits high room-temperature ionic conductivity ( $5.58 \times 10^{-4} \text{ S cm}^{-1}$ ) and improved oxidation stability (4.84 V) compared to single-layer counterparts. Li|DDL|Li symmetric cells achieved stable lithium stripping/plating for over 2000 hours.

### Key Findings

A novel asymmetric composite solid electrolyte (DDL) has been developed, demonstrating dramatic improvements in ionic conductivity and interfacial stability, which are critical for the advancement of all-solid-state lithium metal batteries. This DDL electrolyte achieved a high room-temperature ionic conductivity of  $5.58 \times 10^{-4} \text{ S cm}^{-1}$  and superior oxidation stability of 4.84 V. Moreover, Li|DDL|Li symmetric cells showcased stable lithium stripping and plating for over 2000 hours, a significant milestone for long-duration battery performance.

### Technical / Clinical Details

The developed DDL electrolyte was fabricated by integrating LiDFOB, LiFSI, and NASICON-type LATP (Lithium Aluminum Titanium Phosphate) fillers within a PVDF-HFP (polyvinylidene fluoride-hexafluoropropylene) polymer matrix. This asymmetric architecture is designed such that each layer contributes distinct functionalities, for instance, forming a stable interface with the lithium metal anode while maintaining high ionic conductivity towards the cathode. This unique design successfully achieved a combination of high room-temperature ionic conductivity ( $5.58 \times 10^{-4} \text{ S cm}^{-1}$ ) and a wide electrochemical stability window (4.84 V vs. Li<sup>+</sup>/Li), which has been challenging to accomplish with single-layer solid electrolytes. Evaluation using Li|DDL|Li symmetric cells confirmed stable lithium stripping and plating behavior for over 2000 hours, demonstrating effective dendrite suppression and long-term cycle stability.

### Background & Context

All-solid-state lithium metal batteries are generating immense excitement in the electric vehicle (EV) and large-scale energy storage sectors as a next-generation battery technology offering higher energy density and improved safety over conventional liquid electrolyte lithium-ion batteries. However, major challenges to commercialization have included high interfacial resistance between the lithium metal anode and solid electrolyte, short-circuiting due to dendrite formation, and limitations in the solid electrolyte's oxidative stability. The asymmetric composite solid electrolyte proposed in this study offers an effective solution to these critical issues and could represent a significant breakthrough in accelerating the commercialization of all-solid-state lithium metal batteries.

## Strategic Significance & Outlook

The development of DDL electrolytes marks a crucial step towards realizing high-performance all-solid-state lithium metal batteries. Their high room-temperature ionic conductivity and excellent interfacial stability significantly broaden their potential for practical application. Future efforts will focus on scaling up manufacturing processes, reducing costs, and verifying performance in actual EV cell sizes. This technology is expected to enhance EV driving range and safety, contributing to the realization of a sustainable energy society.

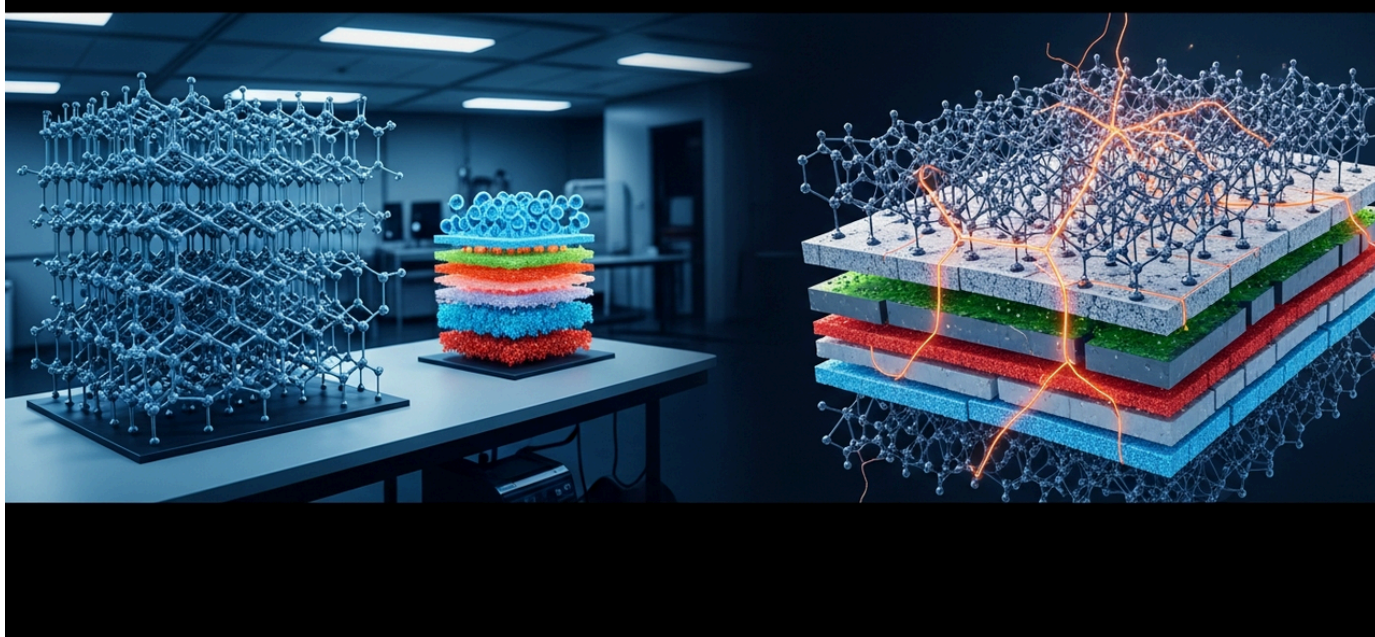
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Source: <https://pubs.acs.org/doi/abs/10.1021/acsaem.6c00763>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Microstructural Optimization of NASICON-Type LAGP Solid Electrolytes and Promise of Halide-Based Electrolytes: High Ionic Conductivity and Oxide Cathode Compatibility

Published June 03, 2026 ResearchGate International



## OVERVIEW

This research details microstructural optimization of NASICON-type LAGP solid electrolytes for enhanced safety and performance in all-solid-state batteries. LAGP is crucial for its potential high ionic conductivity, wide electrochemical window, and low interfacial resistance. Halide-based solid electrolytes are also discussed as highly promising candidates, offering excellent room-temperature ionic conductivity ( $>10^{-3} \text{ S cm}^{-1}$ ) and high compatibility with oxide cathodes, expected to contribute to next-generation solid-state batteries.

### Key Findings

Research has been reported on the microstructural optimization of NASICON-type  $\text{Li}_{1+x}\text{Al}_x\text{Ge}_{2-x}(\text{PO}_4)_3$  (LAGP) solid electrolytes, aimed at enhancing safety and performance in all-solid-state batteries (SSBs). The study emphasizes that achieving high ionic conductivity, a wide electrochemical window, and low interfacial resistance with LAGP is essential for high-performance SSBs. Furthermore, halide-based solid electrolytes are discussed as exceptionally promising candidates, showcasing excellent room-temperature ionic conductivity ( $>10^{-3} \text{ S cm}^{-1}$ ) and high compatibility with oxide cathodes.

### Technical / Clinical Details

Microstructural optimization of NASICON-type LAGP solid electrolytes involves various approaches, including precise control of sintering conditions, reduction of grain boundary resistance, and promotion of densification. These efforts lead to optimized  $\text{Li}^+$  ion conduction pathways and an overall improvement in ionic conductivity. Halide-based solid electrolytes, on the other hand, exhibit high room-temperature ionic conductivity comparable to sulfide-based solid electrolytes ( $>10^{-3} \text{ S cm}^{-1}$ ), while offering the significant advantage of high air stability and excellent compatibility with high-performance oxide cathode materials. This circumvents the challenge of air instability in traditional sulfide electrolytes, potentially simplifying manufacturing processes.

### Background & Context

Amidst the surging demand for batteries in electric vehicles (EVs) and stationary energy storage systems, all-solid-state batteries are being extensively researched and developed worldwide as the most promising next-generation battery technology that can deliver both safety and high energy density. Both NASICON-type and halide-based solid electrolytes, despite having different characteristics, are core materials responsible for efficient  $\text{Li}^+$  ion transport, and their performance improvement directly impacts the commercialization of SSBs. Crucially, compatibility with oxide cathodes is a significant factor for transitioning established high-performance cathode materials from conventional lithium-ion batteries to SSBs.

## Strategic Significance & Outlook

The microstructural optimization of NASICON-type LAGP and the development of halide-based solid electrolytes represent critical directions for further enhancing the performance and safety of SSBs. Future efforts will likely focus on reducing the manufacturing costs of these solid electrolytes, establishing large-scale production technologies, and validating long-term cycle stability. Halide-based solid electrolytes, in particular, hold the potential to become a breakthrough that accelerates the commercialization of next-generation all-solid-state batteries due to their high ionic conductivity and superior air stability.

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Source: [https://www.researchgate.net/publication/405615273\\_Microstructural\\_Optimization\\_of\\_NASICON-Type\\_LAGP\\_Solid\\_Electrolytes\\_for\\_Enhanced\\_Ionic\\_Transport\\_and\\_Cycling\\_Stability](https://www.researchgate.net/publication/405615273_Microstructural_Optimization_of_NASICON-Type_LAGP_Solid_Electrolytes_for_Enhanced_Ionic_Transport_and_Cycling_Stability)

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# EVLife Highlights Importance of Battery Certificates for Used EVs, Hints at Future of Solid-State Batteries

Published May 29, 2026 EVLife International



## OVERVIEW

An EVLife article primarily discusses the critical importance of battery certificates for used electric vehicle (EV) purchases. It emphasizes that such certificates could become the most crucial document for clarifying battery health and residual value. The article also mentions the advent of solid-state battery technology as a future enabler for enhanced EV performance, suggesting anticipation for next-generation EV technologies.

### Key Findings

An article from EVLife underscored that battery certificates could become the most critical document when buying or selling a used electric vehicle (EV). This certificate provides objective data on battery health and residual value, enabling transparent transactions. The article also touched upon the future potential of solid-state batteries as a technology capable of enhancing EV performance.

### Technical / Clinical Details

A battery certificate provides detailed data on EV battery degradation, charge cycle count, remaining capacity, and warranty information. This enables buyers to accurately understand the battery's condition, mitigating uncertainties regarding future replacement costs and vehicle lifespan. Ideally, this data would be sourced from specific diagnostic tools or the vehicle's onboard systems and verified by a third party. The article also suggests that the introduction of solid-state battery technology into EVs could lead to higher energy density, improved safety, and longer lifespan compared to current lithium-ion batteries, further reducing concerns about battery health.

### Background & Context

The used EV market is growing rapidly, and consumer concerns about battery degradation are on the rise. Since the battery is one of the most expensive components of an EV, its condition directly impacts the price and demand of used vehicles. Battery certificates are therefore essential tools for resolving this information asymmetry and enhancing the reliability and liquidity of the used EV market. Concurrently, the development of innovative battery technologies like solid-state batteries is expected to further stabilize the residual value of EVs in the future, increasing their appeal to consumers.

## Strategic Significance & Outlook

The widespread adoption of battery certificates is crucial for fostering healthy growth in the used EV market and building consumer trust. In the future, it is highly probable that all EVs will come equipped with standard battery certificates. Furthermore, as solid-state battery technology matures and becomes widely adopted in EVs, improved battery durability and performance are expected to drive up the value of used EVs. This will maximize the value throughout the EV's lifecycle and contribute to the realization of a sustainable transportation society.

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Source: <https://evlife.world/tech/a-battery-certificate-could-be-the-most-important-document-with-your-used-ev/>

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# J-Star Holding to Construct \$122.5M Solid-State Battery Facility in Baytown, Texas, with Taiwan Central Bank Approving \$60M Investment

Published June 02, 2026 Stock Titan Taiwan



## OVERVIEW

J-Star Holding has announced significant progress on its planned \$122.5 million solid-state battery manufacturing facility in Baytown, Texas. Key milestones include authorization from the Taiwan Central Bank for a \$60 million outbound investment and an 18-month site commitment with infrastructure support from the Baytown Economic Development Foundation. This project aims to establish a U.S.-based manufacturing platform for the company's patented solvent-free solid-state battery technology.

## IN DEPTH

### Key Findings

J-Star Holding has announced several pivotal milestones in the development of its proposed \$122.5 million solid-state battery manufacturing facility in Baytown, Texas. These achievements include receiving authorization from the Taiwan Central Bank for a \$60 million outbound investment and securing an 18-month site commitment with infrastructure support from the Baytown Economic Development Foundation.

### Technical / Clinical Details

The planned manufacturing facility will leverage J-Star Holding's patented solvent-free solid-state battery technology. The solvent-free process is significant as it eliminates the use of hazardous organic solvents commonly found in traditional battery manufacturing, thereby reducing environmental impact, potentially lowering production costs, and enhancing safety. The proposed plant design includes a 12,000-square-foot ISO-7 Ultra-Dry Room, crucial for maintaining the low-humidity environment essential for producing high-quality solid-state batteries. The initial target production capacity is 100 MWh, representing a critical step for advanced technical validation and market entry, albeit at a modest scale.

### Background & Context

Solid-state batteries are heralded as the next generation of batteries for electric vehicles (EVs) and energy storage systems, offering advantages in energy density, safety, and longevity. The U.S. government is actively promoting policies to strengthen its domestic clean energy supply chain and enhance battery manufacturing capabilities. J-Star Holding's project aligns perfectly with this initiative to bolster U.S. manufacturing. The approval of a significant outbound investment from Taiwan underscores international collaboration and reflects a strategic move by Asian companies to establish manufacturing footprints within the United States.

## Strategic Significance & Outlook

The construction of the Baytown facility marks a crucial step towards the commercialization of J-Star Holding's solvent-free solid-state battery technology. The initial 100 MWh production capacity will enable supply to specific high-performance applications and early markets, serving as a springboard for future larger-scale production. This project will contribute to the development of a solid-state battery manufacturing ecosystem in the U.S. and is expected to expand into high-value markets such as EVs, aerospace, and defense. The support from the Taiwanese government further validates the potential competitiveness of this technology.

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Source: <https://www.stocktitan.net/news/YMAT/j-star-holding-outlines-foundational-milestones-supporting-proposed-yeom0b8o2yv9.html>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Hongli Group Inc. Shifts Strategy to Solid-State Lithium Battery Technology, Appoints Dr. Philip A. Medina to Lead Development

Published June 03, 2026 PR Newswire USA



## OVERVIEW

Hongli Group Inc., a cold roll formed steel profile manufacturer, announced a strategic shift to focus its energy storage initiatives on solid-state lithium battery technologies. This follows the establishment of its New Energy Solid-State Battery Division and the engagement of Dr. Philip A. Medina as an independent technical advisor. The company aims to leverage Dr. Medina's expertise in advanced battery systems and solid-state structures for research and patent development, targeting entry into the next-generation battery market.

### Key Findings

Hongli Group Inc., a manufacturer of cold roll formed steel profiles, has announced a significant update to its business strategy, clearly shifting its energy storage initiatives to focus on solid-state lithium battery technologies. This strategic pivot is underpinned by the establishment of its new New Energy Solid-State Battery Division and the appointment of Dr. Philip A. Medina as an independent technical advisor.

### Technical / Clinical Details

Hongli Group intends to fully leverage Dr. Philip A. Medina's extensive expertise, particularly his profound knowledge in advanced battery systems and solid-state structures. Dr. Medina brings over two decades of experience in battery technology, having developed innovative solutions in both academic and industrial settings. Under his guidance, the company plans to accelerate research and development in solid-state lithium batteries, pursuing technological breakthroughs and strategic patent acquisitions. The objective is to capitalize on the key advantages of solid-state batteries, such as high energy density, enhanced safety, and extended lifespan, to establish a competitive edge in the next-generation battery market.

### Background & Context

With the global surge in demand for electric vehicles (EVs) and large-scale energy storage systems, the evolution of battery technology has become a paramount challenge across industries. Solid-state batteries, offering superior safety and performance compared to conventional liquid electrolyte lithium-ion batteries, are attracting numerous companies eager to enter this promising field. The strategic move by a traditional manufacturing company like Hongli Group to expand into the high-growth new energy sector, specifically the solid-state battery market, reflects the current trend of diverse industries converging on the battery revolution.

## Strategic Significance & Outlook

Hongli Group's strategic shift demonstrates its serious commitment to solid-state battery technology as a future growth driver. The involvement of experts like Dr. Medina will be crucial for accelerating the quality and pace of R&D, positioning the company to gain an advantage in a highly competitive market. Going forward, attention will be focused on the company's technological development progress, particularly the expansion of its patent portfolio and its concrete roadmap towards commercialization. This initiative is expected to contribute to the proliferation of next-generation battery technologies and the acceleration of the transition to more sustainable energy solutions.

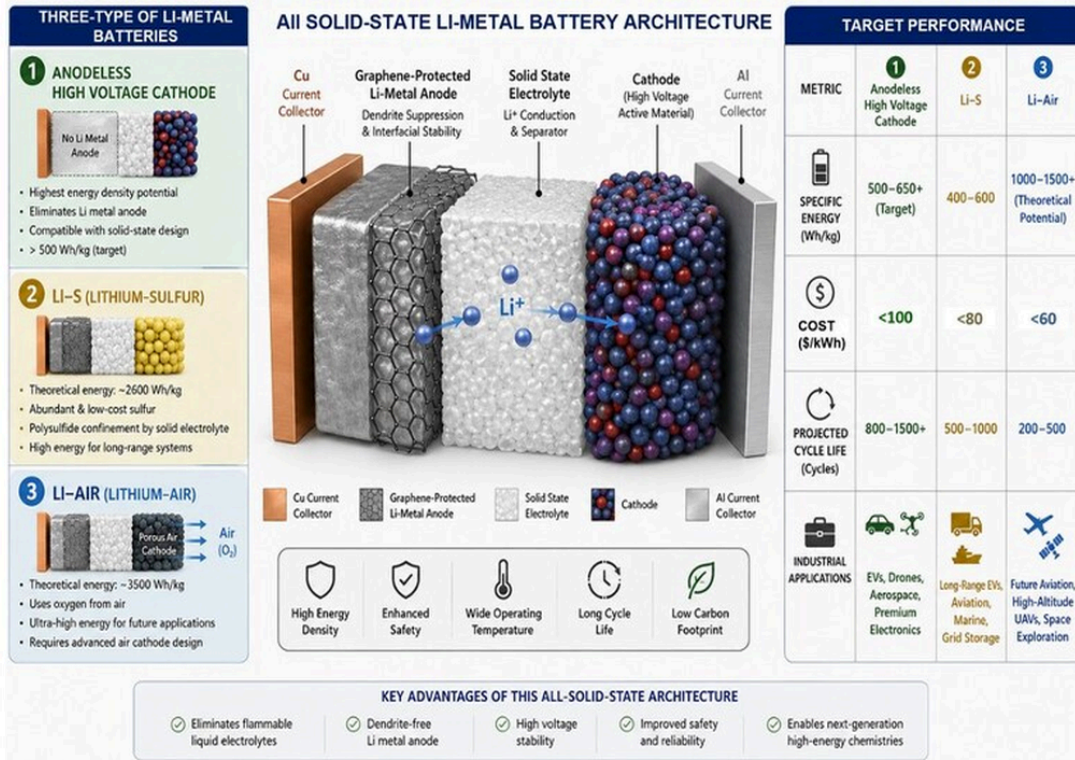
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Source: <https://www.prnewswire.com/news-releases/hongli-group-inc-updates-its-business-strategy-focusing-on-solid-state-lithium-batteries-302789379.html>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Solidion Technology Unveils Patented Extreme-Climate Solid-State Battery Tech Targeting LEO AI Data Centers, Lunar Economy, and Space Exploration Markets

Published June 05, 2026 Newswire.ca USA



## OVERVIEW

Solidion Technology Inc. has announced patented extreme-climate battery technology designed for Low Earth Orbit (LEO)-based Artificial Intelligence (AI) data centers, the lunar economy, and space exploration. The company holds over 385 patents, including proprietary protection technologies that overcome hurdles in commercializing lithium-sulfur, lithium-air, and anodeless lithium metal batteries. This reinforces Solidion's innovations in high-capacity silicon anodes and advanced lithium-sulfur/lithium-metal systems, establishing its leading position in the space sector.

## IN DEPTH

### Key Findings

Solidion Technology Inc. has announced a patented breakthrough in extreme-climate battery technology, specifically designed to target demanding markets such as Low Earth Orbit (LEO)-based Artificial Intelligence (AI) data centers, the lunar economy, and broader space exploration. The company's extensive portfolio of over 385 patents includes proprietary protection technologies engineered to overcome critical challenges in commercializing next-generation chemistries like lithium-sulfur, lithium-air, and anodeless lithium metal batteries.

### Technical / Clinical Details

Solidion Technology's innovations are meticulously crafted to address the inherent hurdles in commercializing advanced battery systems, particularly those that offer higher energy density and lighter weight but face issues like dendrite formation and interfacial stability. The company's patented lithium anode protection technology directly tackles these problems, significantly extending battery cycle life and enhancing safety. The portfolio also includes high-capacity silicon anode technology, further boosting the battery's energy density. These technologies are optimized to withstand extreme temperature fluctuations and radiation environments, providing essential reliability and performance for AI data centers in space, lunar operations, and deep-space missions.

### Background & Context

The burgeoning space economy, marked by the proliferation of LEO satellite constellations and the establishment of lunar bases, is creating an unprecedented demand for power in space. Such environments require batteries that can endure conditions far more extreme than terrestrial applications—including vast temperature swings, vacuum, and intense radiation—while delivering high performance and unwavering reliability. Solidion Technology's announcement directly addresses this need, positioning itself to serve a new frontier market where AI and space converge, which has been difficult for conventional battery technologies to meet.

## Strategic Significance & Outlook

Solidion Technology's extreme-climate battery solutions position the company as a key player in the expanding LEO AI data center, lunar economy, and space exploration markets. The company's extensive patent portfolio solidifies its technological advantage in this sector, providing robust support for future space infrastructure development and exploratory missions. The next steps towards commercialization will involve rigorous validation of these technologies in actual space missions and lunar applications, further enhancing their durability and reliability for critical missions beyond Earth.

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Source: <https://www.newswire.ca/news-releases/solidion-technology-s-30-patents-for-space-based-artificial-intelligence-batteries-include-the-highest-performing-patented-lithium-anode-protection-technology-881109259.html>

Collected: June 06, 2026 | Automated Research System (Gemini API)

# Japan's METI Accelerates Solid-State Battery Commercialization by 2030, Aims to Triple Battery Sales to Meet AI Data Center Demand

Published June 02, 2026   BigGo Finance   Japan



## OVERVIEW

Japan's Ministry of Economy, Trade and Industry (METI) has unveiled a new strategy to triple sales by Japanese battery companies by 2035. The plan includes accelerating the full-scale commercialization of solid-state batteries around 2030, targeting higher capacity and output to enhance international competitiveness. METI will expand support to power systems for AI data centers and robots, driven by the surging demand for stable power in the AI data center boom.

### Key Findings

Japan's Ministry of Economy, Trade and Industry (METI) has announced an ambitious new strategy to triple the sales revenue of Japanese battery companies by 2035. A cornerstone of this strategy is the acceleration of full-scale commercialization for all-solid-state batteries by approximately 2030, aiming to boost international competitiveness through enhanced capacity and output. This initiative specifically prioritizes stable power supply systems to meet the explosive demand from Artificial Intelligence (AI) data centers.

### Technical / Clinical Details

METI's strategy places a strong emphasis on the development and mass production of all-solid-state battery technology. Compared to conventional liquid electrolyte lithium-ion batteries, all-solid-state batteries offer advantages in safety, energy density, and longevity, making them particularly promising for applications not only in EVs but also in high-performance sectors like AI data centers. The plan aims to establish Japan's technological leadership by strengthening comprehensive support systems, from research and development phases to manufacturing and supply chain construction. AI data centers, requiring vast and stable power for immense computational loads, represent an ideal application for all-solid-state batteries.

### Background & Context

The global battery market is experiencing unprecedented growth driven by the proliferation of electric vehicles (EVs), renewable energy sources, and the recent AI data center boom. While Japan has historically led battery technology R&D, companies from China and South Korea have gained a competitive edge in mass production and cost efficiency in recent years. METI's new strategy positions this as a national effort for Japan's battery industry to reclaim global leadership and capture demand from the rapidly growing AI-related market.

## Strategic Significance & Outlook

Achieving the target of tripling sales by 2035 critically depends on the full-scale commercialization of all-solid-state batteries by 2030. Expanding support for power systems in AI data centers and robotics has the potential to establish Japan's technological superiority in these sectors and create new market opportunities. Going forward, accelerated R&D through public-private partnerships, strengthening supply chains, and contributing to international standardization will be key determinants of this strategy's success. This represents a crucial step for Japan to regain prominence in the next-generation battery market.

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Source: [https://finance.biggo.com/news/9EMwiZ4BNI\\_-4\\_Gw\\_jF](https://finance.biggo.com/news/9EMwiZ4BNI_-4_Gw_jF)

Collected: June 06, 2026 | Automated Research System (Gemini API)

# China's Guoxiang Shiji to Build Integrated Solid-State Battery Industrial Complex in Shanghai Jiading, Unifying R&D to Mass Production

Published May 29, 2026 Gasgoo Express China



## OVERVIEW

Guoxiang Shiji's new energy project has been officially settled in Jiading, Shanghai, with plans to build a solid-state battery industrial complex. This comprehensive facility will integrate a headquarters, a global research institute, pilot and mass production lines, a product exhibition center, and an independent shared energy storage demonstration station. This initiative aims to drive solid-state battery R&D, manufacturing, and application from end-to-end, solidifying the company's position in the new energy industry.

### Key Findings

Guoxiang Shiji's (likely an affiliate of Gotion High-tech) new energy project has officially secured its location in Jiading District, Shanghai, with plans for the construction of a comprehensive solid-state battery industrial complex. This integrated facility is designed to encompass capabilities from research and development (R&D) to pilot production and mass manufacturing.

### Technical / Clinical Details

The planned industrial complex will include several key components: a corporate headquarters to serve as the strategic center; a global research institute dedicated to advancing R&D efforts; pilot production lines for demonstrating and validating new solid-state battery technologies; and full-scale mass production lines to enable large-volume market supply. Additionally, a product exhibition center will showcase the latest innovations, and an independent shared energy storage demonstration station will validate energy storage solutions. These facilities are intended to establish an end-to-end ecosystem capable of addressing all aspects of solid-state battery development, from material science and cell design to module integration and system implementation.

### Background & Context

China is channeling national resources into the development of next-generation battery technologies, aiming for global leadership in the electric vehicle (EV) and energy storage sectors. Solid-state batteries, offering advantages in safety, energy density, and longevity over existing lithium-ion batteries, are a core technology in this national strategy. The construction of such an integrated industrial complex by companies like Guoxiang Shiji demonstrates China's strong intent to establish a complete domestic solid-state battery supply chain and to drive innovation, mass production, and market entry cohesively. Jiading, Shanghai, being a hub for China's automotive and advanced technology industries, will also enable enhanced collaboration with related sectors.

## Strategic Significance & Outlook

The establishment of Guoxiang Shiji's solid-state battery industrial complex will be a significant milestone in accelerating the commercialization of solid-state batteries in China. By integrating R&D with mass production, development cycles are expected to shorten, and technical challenges will be addressed efficiently, leading to cost reductions. This facility will serve as a powerful catalyst for China to further enhance its international competitiveness in next-generation battery technology and solidify its leading position in the EV and energy storage markets.

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Source: <https://autonews.gasgoo.com/articles/news/gasgoo-express-avatr-prepares-to-resubmit-ipo-prospectus-2060238712200548353>

Collected: June 06, 2026 | Automated Research System (Gemini API)