SolidStateBattery

Weekly Intelligence Report

2026-08-30 | 24 articles | 6 countries

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This Week's Keyword

SSB 2027 Commercialization

China, Japan, EU/US race for EV SSBs

24	6	500 Wh/kg	2027
articles	countries	target	year
Total Articles Analyzed	Source Countries	SSB Energy Density	Key Commercialization

All 24 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	Chonnam Tri-Layer SSB	Research	4.5	1	4	4.5	3	South Korean university develops tri-layer composite solid electrolyte, achieving 1,000+ cycles with enhanced safety.
#02	Geely 500 Wh/kg SSB 2027	Corporate Strategy	4	3	4.5	4	4	Geely plans pilot deployment of 500 Wh/kg solid-state EV batteries by 2027, promising 1,000 km range.
#03	Toyota/Panasonic SSB 2027	Corporate Strategy	4	3	4.5	4	4	Toyota and Panasonic target 2027-2028 commercialization for EV solid-state batteries, aiming for double range.
#04	WELION Semi-Solid NIO ET7	New Product	3	4.5	4	4	4	China's WELION powers NIO ET7 with 360Wh/kg semi-solid-state batteries, achieving 1,000km+ range.
#05	Ultralife HR Series Cell	New Product	2	4.5	2	4	4.5	Ultralife unveils Electrochem HR Series hybrid cell, a new primary lithium battery with enhanced power and durability.
#06	China SSB Standardization	Corporate Strategy	2	4.5	4.5	3	4.5	China establishes first SSB classification framework and drives IEC international standard development.
#07	Qinghai Li2S Project	Supply Chain	3	3	4	3	4	China's Qinghai Weixiang Technology to complete 3,000-ton/year lithium sulfide project by July 2027 for SSBs.
#08	Guide to Industrial SSBs	Overview	1	4.5	2	2	4	Guide highlights industrial solid-state batteries' advantages in dendrite suppression and low-temperature performance.
#09	US Utility Battery Surge	Market Report	1	4	4	3	4.5	U.S. utility-scale battery capacity projected to surge 60% to 24,000 MW in 2026, driven by renewables.
#10	Geely Accelerates SSB Tests	Corporate Strategy	4	3	4.5	4	4	Geely accelerates 500 Wh/kg solid-state battery road tests, targeting 2027 EV pilot deployment.
#11	China Makers SSB 2027	Corporate Strategy	4	3	4.5	4	4	China's leading battery makers target 2027 solid-state battery trial production, intensifying race with BYD and CATL.
#12	China-Led Global SSB Std	Corporate Strategy	3	4.5	4.5	4	4.5	China-led global solid-state battery standard approved by IEC, signaling era of 500Wh/kg batteries.

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#13	Samsung SDI/VW SSB 2027	Corporate Strategy	●●●●○	●●●○○	●●●●○	●●●○○	●●●●○	Samsung SDI and Volkswagen accelerate solid-state battery development towards 2027 mass production targets.
#14	TDK Ceramic Chip Battery	New Product	●●●●○	●●●●○	●●●○○	●●●●○	●●●○○	TDK unveils multilayer ceramic chip battery with oxide solid-state electrolyte, enhancing safety and miniaturization.
#15	Geely Eyes Volvo SSB 2027	Corporate Strategy	●●●●○	●●●○○	●●●●○	●●●●○	●●●●○	Geely sets 2027 EV pilot for 500 Wh/kg solid-state batteries, eyeing Volvo integration for premium EVs.
#16	QuantumScape CTO Sells	Corporate News	●○○○○	●○○○○	●○○○○	●●○○○	●●●●○	QuantumScape CTO sells over 40,000 shares to fulfill tax obligations under a pre-arranged plan.
#17	Graphene SSB Patent	Research	●●●●○	●●○○○	●●●●○	●●●●○	●●●●○	New patent for solid-state battery manufacturing utilizing graphene aims for enhanced safety and efficiency.
#18	QuantumScape CTO Sells	Corporate News	●○○○○	●○○○○	●○○○○	●●○○○	●●●●○	QuantumScape Co-Founder & CTO sells entire trust holdings under a pre-arranged trading plan.
#19	QuantumScape CEO Divests	Corporate News	●○○○○	●○○○○	●○○○○	●●○○○	●●●●○	QuantumScape CEO divests 80,000 shares to cover RSU-related tax obligations, not an investment decision.
#20	Geely 2027 SSB Pilot	Corporate Strategy	●●●●○	●●●○○	●●●●○	●●●●○	●●●●○	Geely announces 2027 solid-state battery pilot, targeting 1,000km+ range and extended lifespan with Dow Chemical.
#21	Toyota SSB Patent	Research	●●●●○	●●○○○	●●●●○	●●●●○	●●●●○	Toyota Motor Corporation publishes new patent for all-solid-state battery and its manufacturing method.
#22	QuantumScape CDO Sells	Corporate News	●○○○○	●○○○○	●○○○○	●●○○○	●●●●○	QuantumScape CDO sells shares valued at $197K to fulfill RSU tax obligations, not reflecting investment sentiment.
#23	SSB Patent Analysis	Analysis	●○○○○	●●●●○	●●●○○	●●●○○	●●●○○	Report reveals solid-state battery patent filings peaked in 2022, with cell chemistry dominating activity.
#24	Honda SSB Demo Line 2026	Corporate Strategy	●●●○○	●●●○○	●●●●○	●●●●○	●●●●○	Honda inaugurates solid-state battery cell production demo line, targeting 2026 launch for EV integration.

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

Three Questions That Demand Your Decision This Week

❶ Is your EV roadmap competitive against China's 2027 SSB push?

Chinese OEMs (Geely, NIO) and battery makers (WELION, Dreame, Farasis, EVE) are aggressively targeting 2027 for 500 Wh/kg solid-state or advanced semi-solid batteries, promising 1,000km+ range. Does your current EV battery strategy match this pace?

❷ Are your SSB material supply chains diversified from China?

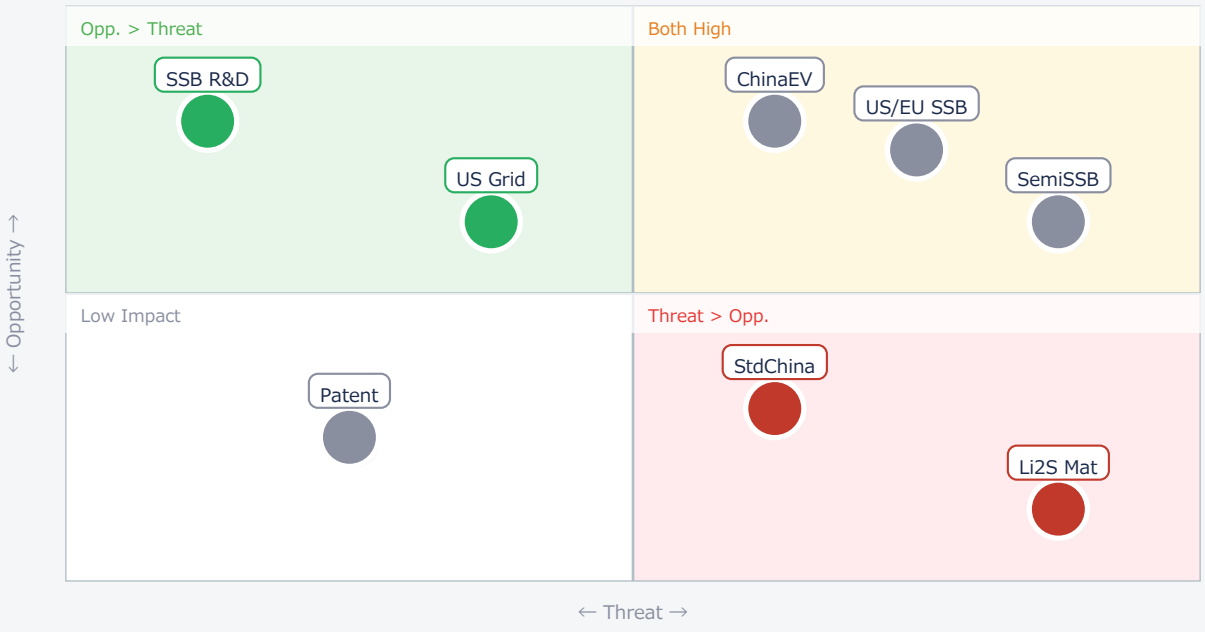
China is not only leading in SSB commercialization but also securing critical material supply, like Qinghai Weixiang's 3,000-ton/year lithium sulfide project by 2027. Is your procurement strategy robust enough to avoid future dependencies?

❸ Are you actively shaping global SSB standards or merely reacting?

China has established the first national SSB classification framework and successfully pushed for IEC international standard approval. This will dictate future technical benchmarks. Are your teams engaged in these critical standardization efforts?

Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
ChinaEV	Critical	EV market growth	Asian market lead
StdChina	Threat	Clear standards	China dictates tech
Li2S Mat	Threat	Stable supply	China control
SemiSSB	Critical	Bridging tech	New market leader
US/EU SSB	Critical	Strategic alliances	Lagging timelines
SSB R&D;	Opp.	IP/Licensing	Slow commercial
US Grid	Opp.	Storage market	Incumbent tech

● Patent	Ref.	R&D; insights	IP barriers

Deep Dive ① — China Drives Global SSB Standardization

#12 | 2026/08/28 | Shanghai Metals Market (SMM) | Tech Novelty●●●○○ Proximity●●●●● Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●●

China has successfully led the approval of the world's first international standard for all-solid-state batteries by the IEC. This establishes unified technical benchmarks, accelerating global product development and trade.

Domestically, Saike Power secured significant funding for sulfide electrolyte R&D; and pilot line expansion. GaoNeng ShuZao's 20Ah sulfide cell passed a nail penetration test without ignition, demonstrating enhanced safety.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: The published numbers regarding funding and safety tests are credible, reflecting significant investment. The main technical barrier for sulfide electrolytes remains air stability and manufacturing complexity at scale. [Opportunity] for US/EU companies to engage with these emerging standards early and influence future revisions, ensuring interoperability. [Threat] is that China is proactively shaping the global SSB landscape, potentially disadvantaging US/EU firms if they merely react. Next actions: [Legal/IP] & [Strategy] teams must immediately engage with IEC and national standardization bodies to understand and influence these new benchmarks by Q4 2026.

Deep Dive ② — Geely Targets 500 Wh/kg SSB by 2027

#02 | 2026/08/20 | Electrek | Tech Novelty●●●●○ Proximity●●●○○ Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●○

Geely Holding plans pilot deployment of 500 Wh/kg solid-state EV batteries by 2027, aiming for 1,000 km range and 1 million km lifespan. Vehicle validation tests began in 2026.

Dow Chemical is a key material partner, contributing stable adhesive solutions for extreme temperatures (-40°C to 120°C). This high energy density nearly doubles current mainstream Li-ion packs.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: Geely's targets are ambitious but plausible given the rapid advancements and partnerships with material giants like Dow. Key technical barriers include achieving consistent performance at scale, managing interfacial resistance, and cost reduction. [Opportunity] for US/EU materials suppliers (like Dow) to partner with Asian OEMs, and for US/EU OEMs to benchmark and accelerate their own SSB development. [Threat] is that Chinese OEMs could gain a significant competitive edge in EV range and safety, potentially eroding market share for US/EU brands. Next actions: [R&D;] teams to benchmark 500 Wh/kg SSB performance and identify material gaps by Q1 2027. [Business Dev] to explore strategic partnerships with leading SSB developers.

Deep Dive ③ — WELION's Semi-Solid Batteries in NIO ET7

#04 | 2026/08/20 | TechInsights | Tech Novelty●●●○○ Proximity●●●●● Market Impact●●●●○ Data Reliability●●●●○ US/EU Relevance●●●●○

China's WELION New Energy demonstrated over 1,000 km range in NIO's ET7 sedan using its 150-kWh, 360Wh/kg semi-solid battery pack. These cells use an oxide-polymer composite with "in-situ solidification" electrolyte.

Mass production and shipment of these semi-solid cells commenced in June 2023, validating real-world performance. WELION is also preparing for an IPO, signaling strong market confidence.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: WELION's achievement with semi-solid batteries is highly realistic, as it's already in commercial vehicles. This technology serves as a crucial bridge to full solid-state. Technical barriers include further increasing energy density and improving long-term cycle stability compared to full SSBs. [Opportunity] for US/EU OEMs to integrate similar semi-solid solutions for immediate range and safety improvements, or for material suppliers to offer advanced composite electrolytes. [Threat] is that Chinese companies are already deploying advanced battery tech, setting a high bar for performance and accelerating EV adoption in their market. Next actions: [Procurement] and [R&D;] to evaluate semi-solid battery suppliers and performance benchmarks by end of 2026, considering integration into next-gen platforms.

Other Notable Articles

Toyota and Panasonic Target 2027-2028 Commercialization for EV Solid-State Batteries (Top Speed)
Tech Novelty●●●●○ Proximity●●●○○ Market Impact●●●●●

Toyota and Panasonic's aggressive 2027-2028 SSB commercialization plan, backed by $13B investment, signals fierce competition.

Samsung SDI and Volkswagen Accelerate Solid-State Battery Development Towards 2027 Mass Production Targets (SoylentNews)
Tech Novelty●●●●○ Proximity●●●○○ Market Impact●●●●●

US/EU players like VW (with QuantumScape) and Samsung SDI (with BMW) are also targeting 2027 for SSB mass production, but semi-solid may come first.

Chonnam National University Unveils Tri-Layer Composite Solid Electrolyte for Lithium-Metal Batteries (EurekAlert!)
Tech Novelty●●●●● Proximity●○○○○ Market Impact●●●●○

Academic breakthrough from South Korea in tri-layer solid electrolytes offers significant safety and lifespan improvements for LMBs.

TDK Unveils Multilayer Ceramic Chip Battery with Oxide Solid-State Electrolyte (TechInsights)
Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●○○

TDK's ceramic chip SSB offers enhanced safety and miniaturization for consumer electronics and potential EV applications.

Recommended Actions This Week

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

Immediate (this week)

- [Strategy] Assess China's 2027 SSB targets (Geely, Toyota, Honda) against internal EV roadmaps and competitive positioning.
- [Procurement] Review current and planned SSB material supply chain dependencies, especially for critical materials like lithium sulfide.
- [R&D;] Analyze Chonnam National University's tri-layer electrolyte breakthrough for potential IP or collaboration opportunities.

Short-term (1 month)

- [Legal/IP] Engage with IEC standardization bodies to understand and influence the newly approved global SSB standards.
- [Business Dev] Evaluate WELION's semi-solid battery performance in NIO ET7 for competitive benchmarking and potential licensing/partnership models.
- [R&D;] Benchmark TDK's multilayer ceramic chip battery for miniaturized applications and explore oxide-based electrolyte advancements.

Medium-long term (quarter+)

- [Executive] Develop a comprehensive strategy to counter China's growing dominance in SSB manufacturing, standardization, and material supply.
- [R&D;] Invest in advanced solid electrolyte materials and manufacturing processes to achieve 500 Wh/kg targets and overcome remaining technical barriers.
- [Procurement] Diversify critical material sourcing for SSBs to mitigate geopolitical risks and ensure long-term supply stability.

SolidStateBattery — Selected Articles

Date: 2026-08-30

Articles: 24

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#19 QuantumScape CEO Divests 80,000 Shares to Cover RSU-Related Tax Obligations

#20 Geely Announces 2027 Solid-State Battery Pilot, Targeting 1,000km+ Range and Extended Lifespan

#21 Toyota Motor Corporation Publishes New Patent for All-Solid-State Battery and Manufacturing Method

#22 QuantumScape CDO Sells Shares Valued at $197K to Fulfill RSU Tax Obligations

#23 Solid-State Battery Patent Analysis Report Reveals 2022 Peak in Filings, Cell Chemistry Dominance

#24 Honda Inaugurates Solid-State Battery Cell Production Demo Line in Sakura R&D Facility, Targeting 2026 Launch

#01 Chonnam National University Unveils Tri-Layer Composite Solid Electrolyte for Lithium-Metal Batteries, Achieving 1,000+ Cycle Lifespan with Enhanced Safety

Published August 26, 2026 EurekAlert! South Korea

OVERVIEW

Researchers at Chonnam National University in South Korea have developed a novel tri-layer composite solid electrolyte (CSE) that significantly improves the ionic transport and suppresses dendrite formation in lithium-metal batteries (LMBs). This new electrolyte enables stable operation for over 1,000 cycles with more than 80% capacity retention in $LiFePO_4$|Li cells, offering a major leap in battery safety and lifespan. The breakthrough addresses critical limitations of LMBs, paving the way for their practical application in electric vehicles, aviation, and grid-scale energy storage.

IN DEPTH

Key Findings

A research team from Chonnam National University in South Korea has achieved a significant breakthrough in lithium-metal battery (LMB) technology by developing an innovative tri-layer composite solid electrolyte (CSE). This CSE effectively enhances ionic transport while robustly suppressing lithium dendrite growth, a long-standing challenge that compromises battery safety and cycle life. The new electrolyte demonstrated remarkable performance, enabling $LiFePO_4$|Li cells to achieve over 1,000 charge-discharge cycles with more than 80% capacity retention and exhibiting a high ionic conductivity of 5.60×10^{-3} $S.cm^{-1}$ at 60°C.

Technical / Clinical Details

The core of this innovation lies in the optimized design of the three-layer composite, which facilitates efficient lithium-ion movement and acts as a physical barrier against dendrite penetration. Laboratory tests have shown stable cycling for over 1,000 hours. Furthermore, the battery demonstrated exceptional mechanical durability and functional reliability, continuing to power an LED even when folded or partially cut. This polymer-ceramic composite material effectively prevents internal short circuits and mitigates the thermal runaway mechanisms responsible for battery fires, significantly improving overall safety compared to conventional liquid electrolytes. The ionic conductivity achieved is approximately four times higher than that of polyethylene oxide-based electrolytes, marking a substantial step towards practical application.

Background & Context

Lithium-metal batteries are considered a cornerstone for next-generation energy storage due to their significantly higher theoretical energy density compared to current lithium-ion batteries. However, the formation of lithium dendrites on the anode during cycling has been a critical obstacle, leading to safety hazards like internal short circuits and diminished battery lifespan. This research from Chonnam National University provides a compelling solution to these challenges, opening new avenues for high-energy-density and high-safety batteries for various applications. The findings were published in the prestigious journal 'Advanced Materials' on August 3, 2026.

Strategic Significance & Outlook

This development holds profound implications for several industries. For electric vehicles (EVs), it could lead to substantially extended driving ranges and faster charging capabilities. The enhanced safety profile also makes LMBs more viable for demanding applications in aviation, including electric aircraft and drones, where reliability is paramount. Moreover, the long-lasting and safe characteristics of these batteries are crucial for grid-scale energy storage systems, supporting the integration of renewable energy sources. The next steps involve scaling up the technology for larger cell formats and establishing robust manufacturing processes for commercial deployment.

Source: https://www.eurekalert.org/news-releases/1141359

#02 Geely to Pilot 500 Wh/kg Solid-State EV Batteries in 2027, Promising 1,000 km Range and 1 Million km Lifespan

Published August 20, 2026 Electrek China

OVERVIEW

Geely Holding announced plans to begin pilot deployment of next-generation solid-state batteries (SSBs) with an energy density of 500 Wh/kg in 2027 across its various brands. These batteries are projected to enable electric vehicles (EVs) to achieve over 1,000 km (621 miles) of range and boast a lifespan of 1 million kilometers. Vehicle validation tests commenced in 2026, marking a significant step towards overcoming current battery limitations and accelerating EV adoption.

IN DEPTH

Key Findings

Geely Holding has unveiled ambitious plans for its next-generation solid-state battery (SSB) technology, announcing that pilot deployment in its subsidiary brands will commence in 2027. This groundbreaking battery is claimed to achieve an energy density of 500 Wh/kg, which could enable electric vehicles (EVs) to travel over 1,000 km (621 miles) on a single charge and offer an exceptional lifespan of 1 million kilometers. This represents a significant leap forward in battery performance, aiming to address critical consumer concerns regarding range anxiety and battery longevity.

Technical / Clinical Details

The 500 Wh/kg energy density marks a substantial improvement, nearly doubling the energy storage capacity of current mainstream lithium-ion battery packs. This high energy density, combined with the inherent safety advantages of solid electrolytes—which eliminate the risk of liquid electrolyte leakage and associated fire hazards—positions Geely's SSB as a transformative technology. Dow Chemical is a key material development partner, having contributed stable adhesive solutions that maintain performance across extreme temperatures, ranging from -40°C to 120°C. Real-world vehicle validation tests for these batteries began in 2026, transitioning from laboratory benchmarks to practical, on-road conditions.

Background & Context

The global automotive industry is in a fierce race to develop and commercialize solid-state batteries, which are seen as the ultimate successor to conventional lithium-ion batteries. Higher energy density, enhanced safety due to non-flammable solid electrolytes, and extended cycle life are pivotal for accelerating EV adoption. Geely's broad portfolio of brands, including Zeekr, Lynk & Co, Volvo, Polestar, Lotus, and Smart, positions the company to integrate this advanced battery technology across a diverse range of vehicles, leveraging a unified platform strategy. This move places Geely at the forefront of the SSB development race, directly competing with other global players.

Strategic Significance & Outlook

The planned pilot deployment in 2027 is a critical milestone that could reshape the EV landscape. If successful, Geely's SSBs would significantly boost the competitiveness of its EV offerings, making long-distance travel and rapid charging more feasible. The promise of a 1,000 km range and a 1 million km lifespan could dismantle remaining barriers for consumers hesitant to switch from internal combustion engine vehicles, potentially even outperforming diesel vehicles in terms of efficiency and environmental impact. As battery technology continues to evolve rapidly, Geely's aggressive roadmap for SSB commercialization will be closely watched by the industry and investors alike.

Source: https://electrek.co/2026/08/20/geely-500-wh-kg-solid-state-battery-2027-pilot/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#03 Toyota and Panasonic Target 2027-2028 Commercialization for EV Solid-State Batteries, Aiming for Double Range and Zero Fire Risk

Published August 27, 2026 Top Speed Japan

OVERVIEW

Toyota and Panasonic are on track to commercialize solid-state batteries for electric vehicles (EVs) between 2027 and 2028, with ambitious goals to double driving range and eliminate fire risk. Toyota has already invested over $13 billion in SSB development, with mass production slated for late 2026 and integration into Lexus flagship models by 2027-2028. This joint effort is aligned with Japanese industrial policy to strengthen domestic battery production infrastructure.

IN DEPTH

Key Findings

Toyota Motor Corporation and Panasonic are aggressively pursuing the commercialization of solid-state batteries (SSBs) for electric vehicles (EVs), targeting a market launch between 2027 and 2028. This initiative aims to double the driving range of EVs and fundamentally eliminate fire risks associated with current lithium-ion batteries by utilizing a solid electrolyte. Toyota has already committed over $13 billion to solid-state battery research and development, underscoring the strategic importance of this technology for its future product lineup.

Technical / Clinical Details

Toyota plans to initiate mass production of SSBs in the latter half of 2026, with initial integration into its flagship Lexus models scheduled for 2027-2028. This development leverages a crucial strategic alliance with Panasonic, under which they formed a joint venture specializing in automotive prismatic batteries. This venture focuses on the development, manufacturing, and sales of high-capacity, high-output lithium-ion batteries, SSBs, and other next-generation automotive batteries. The solid electrolyte technology is expected to dramatically enhance stability and safety, particularly in high-temperature environments, pushing beyond the current limitations of liquid electrolyte-based batteries.

Background & Context

Solid-state batteries are widely recognized as a game-changer for the EV industry, promising higher energy density, improved safety, and extended lifespan. The collaborative efforts between Toyota and Panasonic are closely aligned with Japan's Ministry of Economy, Trade and Industry (METI) policies aimed at strengthening the domestic battery production infrastructure. The successful commercialization of SSBs is expected to boost consumer confidence in EVs by reducing concerns over battery-related incidents, thereby accelerating overall market adoption.

Strategic Significance & Outlook

Toyota's ambitious target for 2027-2028 commercialization is set to have a profound impact on the global EV battery market. The projected doubling of driving range will offer a decisive advantage in long-distance travel segments and high-performance EV categories. Furthermore, the elimination of fire risk could pave the way for broader EV adoption in public transport and commercial vehicle fleets. This development will undoubtedly intensify competition among global automotive manufacturers and battery suppliers, driving further innovation in next-generation battery technologies. The outcome of Toyota's SSB roadmap will be a critical indicator for the future direction of the EV industry.

Source: https://www.topspeed.com/toyota-solid-state-battery-development-current-status/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#04 China's WELION Powers NIO ET7 with 360Wh/kg Semi-Solid-State Batteries, Achieving 1,000km+ Range; Pursues IPO

Published August 20, 2026 TechInsights China

OVERVIEW

WELION New Energy, a Chinese battery manufacturer, demonstrated over 1,000 km (650 miles) of range in NIO's ET7 sedan using its 150-kWh semi-solid battery pack. These 360Wh/kg semi-solid cells are built on an innovative oxide-polymer composite system with an "in-situ solidification" composite electrolyte. WELION is currently preparing for an IPO on the domestic stock market, signaling strong market confidence in its advanced EV battery technology.

IN DEPTH

Key Findings

WELION New Energy, a prominent Chinese battery manufacturer, has achieved a groundbreaking milestone by demonstrating over 1,000 km (650 miles) of driving range on a single charge in NIO's ET7 sedan, powered by its 150-kWh semi-solid battery pack. This achievement significantly alleviates range anxiety for electric vehicle (EV) consumers. The company's semi-solid battery cells boast a high energy density of 360Wh/kg, underpinned by an innovative "in-situ solidification" composite electrolyte system based on an oxide and polymer composite platform.

Technical / Clinical Details

WELION's semi-solid batteries employ a hybrid system combining liquid and solid electrolytes, effectively reducing the risk of leakage while enhancing battery lifespan and performance. The "in-situ solidification" technology is particularly noteworthy; it chemically transforms the liquid electrolyte into a stable solid matrix within the cell casing. This approach bridges the gap between traditional liquid lithium-ion cells and pure solid-state platforms, delivering a balance of excellent ionic conductivity and mechanical stability. This enables safe and consistent operation even in elevated temperature environments. Mass production and shipment of the 360Wh/kg semi-solid battery cells commenced as early as June 30, 2023, with their application in the NIO ET7 model validating their real-world performance.

Background & Context

The EV market urgently demands improvements in driving range and safety, with solid-state and semi-solid-state batteries seen as critical solutions. China, with strong government backing, is at the forefront of battery technology development, and companies like WELION are key drivers of this evolution. The partnership with NIO provides crucial validation for WELION's technology in production EVs, significantly boosting its market credibility. Furthermore, WELION's ongoing preparations for an Initial Public Offering (IPO) on the domestic stock market reflect high investor confidence in the future prospects of its technology and business.

Strategic Significance & Outlook

WELION's semi-solid battery technology holds the potential to transform a wide array of applications, including EVs, energy storage systems, and small power products. The promise of over 1,000 km range and enhanced safety will undoubtedly lower barriers for EV adoption, accelerating market expansion. A successful IPO will provide further capital for R&D and manufacturing capacity expansion, quickening the pace of technological innovation. This technology represents an important intermediate step in the battery industry, paving the way for eventual full solid-state battery commercialization, and is attracting considerable attention from the global market as a key enabler for next-generation electric mobility.

Source: https://www.techinsights.com/blog/welions-semi-solid-state-batteries-transforming-evs-and-small-power-products

#05 Ultralife Corporation Unveils Electrochem HR Series Hybrid Cell, a New Category of Primary Lithium Battery Offering Enhanced Power and Durability

Published August 25, 2026 Electronics for Engineers USA

OVERVIEW

Global battery manufacturer Ultralife Corporation has launched the Electrochem HR Series hybrid cell, a new product category designed to overcome traditional performance trade-offs in standard primary lithium battery technology. This innovative battery simultaneously delivers enhanced power performance and superior environmental durability, offering new options for demanding device designs. The development significantly increases design flexibility for various industrial applications requiring high performance and reliability.

IN DEPTH

Key Findings

Ultralife Corporation, a global leader in battery manufacturing, has introduced the groundbreaking Electrochem HR Series hybrid cell, a new product category engineered to resolve the inherent trade-offs between medium-rate and high-rate performance in conventional primary lithium battery technologies. This novel battery simultaneously achieves significantly enhanced power output and exceptional environmental durability, offering a compelling solution for a wide range of critical device designs where high performance and long-term reliability are paramount.

Technical / Clinical Details

The Electrochem HR Series hybrid cell leverages a proprietary design that allows it to deliver both high power and sustained endurance, a combination previously challenging for primary lithium batteries. Specifically, it maintains robust peak power delivery and stable energy supply while retaining performance under harsh environmental conditions, including wide temperature fluctuations, severe vibration, and shock. This advancement is critical for applications such as industrial sensors, medical devices, security systems, and communication equipment, all of which require reliable power and high operational integrity. The hybrid cell is optimized to efficiently meet the often-conflicting requirements of instantaneous high-power demands and overall extended lifespan in diverse operational scenarios.

Background & Context

Industries relying on compact yet powerful and reliable battery solutions have long faced limitations with traditional primary lithium batteries. While these batteries offer high energy density, their capacity to deliver high power or maintain performance in extreme environments has been constrained. Consequently, designers have frequently been forced to compromise between power capabilities, operational lifespan, and environmental robustness. Ultralife's HR Series directly addresses this longstanding challenge, offering a significant upgrade in battery design flexibility and performance standards, particularly for mission-critical applications where failure is not an option.

Strategic Significance & Outlook

The introduction of the Electrochem HR Series hybrid cell is poised to create a new competitive segment within the primary lithium battery market and accelerate innovation across various industrial equipment sectors. It is expected to see rapid adoption in IoT devices, smart utility infrastructure, defense, and aerospace applications, where both power and extreme durability are essential. This technology will contribute to device miniaturization, enhanced operational performance, and reduced maintenance costs, ultimately providing more robust and reliable solutions to the market. Ultralife's innovation sets a new benchmark for primary battery technology, potentially redefining expectations for portable power solutions across demanding industries.

Source: https://efemag.co.uk/ultralife-announces-hr-series-hybrid-cell/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#06 China Leads Global Solid-State Battery Standardization: Establishes First Classification Framework and Drives IEC International Standard Development

Published August 26, 2026 Discovery Alert China

OVERVIEW

China is demonstrating global leadership in solid-state battery (SSB) technology by establishing the world's first official classification framework through its National Standard GB/T 43568-2026 (Part 1 effective July 1, 2026). Furthermore, the IEC (International Electrotechnical Commission) approved China's proposal in August 2026 as a new work item, formally integrating automotive SSBs into the international standard development pipeline. This move lays crucial groundwork for the global adoption and market expansion of solid-state battery technology.

IN DEPTH

Key Findings

China has taken a decisive leadership role in the international standardization of solid-state battery (SSB) technology by unveiling the world's first formal classification framework for SSBs through its National Standard GB/T 43568-2026. Part 1 of this standard became effective on July 1, 2026, clearly signaling China's intent to shape global norms in SSB development and market deployment. Concurrently, in August 2026, the International Electrotechnical Commission (IEC) officially approved China's proposal to include automotive SSBs as a new work item in its international standard development pipeline, further cementing China's influence.

Technical / Clinical Details

The Chinese National Standard GB/T 43568-2026 systematically categorizes different types of solid-state batteries—based on factors such as solid electrolyte composition, manufacturing methods, and cell structures—and provides guidelines for their characteristics and performance evaluation. This comprehensive framework is designed to foster a common understanding and efficient communication across various stages of R&D, manufacturing, and quality control. The IEC's endorsement of international standard development based on China's proposal suggests that this classification framework could become a crucial reference point for researchers, manufacturers, and regulatory bodies worldwide. Establishing international standards is paramount for ensuring product compatibility and accelerating technology adoption globally.

Background & Context

Solid-state batteries are widely recognized as a critically important next-generation battery technology for electric vehicles (EVs) and large-scale energy storage systems, with intense global competition driving their development due to their superior safety, energy density, and cycle life. Standardization is a key enabler for any new technology to gain widespread market acceptance. China, with its dominant position in the EV and battery industries—boasting the world's largest market and production capacity—is actively leveraging its technological prowess to influence the setting of international standards. This strategic move is expected to have significant implications across the entire global supply chain.

Strategic Significance & Outlook

China's initiative to establish national SSB standards and drive international standard development through the IEC will have a decisive impact on the future formation of the solid-state battery market. A well-defined international standard will clarify technological definitions, ensure interoperability, and provide a reliable framework for companies worldwide to confidently adopt and develop SSB technologies. This will accelerate the global commercialization of SSBs in EVs and other power storage applications, fostering an ecosystem that further propels technological innovation. Investors and industry stakeholders should closely monitor these standardization efforts for their long-term market implications and the competitive shifts they are likely to induce.

Source: https://discoveryalert.com.au/china-solid-state-battery-standards-iec-global-industry/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#07 China's Qinghai Weixiang Technology to Complete 3,000-Ton/Year Lithium Sulfide Project by July 2027 for Solid-State Batteries

Published August 22, 2026 Shanghai Metals Market China

OVERVIEW

Qinghai Weixiang Technology Co., Ltd. in China is advancing a project to produce 3,000 metric tons per year of lithium sulfide, a critical material for solid-state batteries, in Qinghai Province, with completion slated for July 2027. This initiative is a pivotal foundation for securing a stable supply of sulfide-based solid electrolytes within the solid-state battery supply chain, accelerating the commercialization of next-generation batteries. This large-scale material production capacity is a strategic investment for China to solidify its leading position in the solid-state battery sector.

IN DEPTH

Key Findings

Qinghai Weixiang Technology Co., Ltd. in China is making significant strides in scaling up the production of lithium sulfide, a core material for solid-state batteries (SSBs). The company is advancing a project in Qinghai Province with a projected annual capacity of 3,000 metric tons. This critical initiative, which completed its corporate investment project filing on August 10, 2026, is scheduled for completion by July 2027. This represents a crucial step towards securing a stable supply of sulfide-based solid electrolytes, thereby addressing potential supply chain bottlenecks and accelerating the commercialization timeline for next-generation batteries.

Technical / Clinical Details

Lithium sulfide (Li_2S) serves as a primary precursor material for sulfide-based solid electrolytes, which are highly valued for their superior ionic conductivity and excellent chemical stability. A key advantage of sulfide-based solid electrolytes is their ability to maintain high ionic conductivity even in low-temperature environments where conventional liquid electrolytes might freeze or become sluggish, which simplifies thermal management at the pack level. Qinghai Weixiang Technology's large-scale project is designed not only to supply raw materials but also to potentially contribute to the overall performance enhancement and cost reduction of SSBs. The annual production volume of 3,000 metric tons is a clear indication of anticipating the mass production era for solid-state batteries.

Background & Context

Amidst the escalating global competition in solid-state battery development, the stable supply of high-performance solid electrolyte materials is paramount for successful commercialization. China, in particular, is intensely focused on strengthening its entire supply chain—from materials to cells and packs—to maintain its position as a global leader in the EV and battery industries. This lithium sulfide production project holds strategic significance, promoting domestic self-sufficiency in critical materials and reducing reliance on external supply, thereby mitigating supply risks. This move can also be seen as China strategically solidifying its foundation in the SSB sector while other nations might still be catching up.

Strategic Significance & Outlook

The completion of this production line in July 2027 will mark a vital milestone in China's solid-state battery supply chain. The substantial supply capacity for lithium sulfide will provide a powerful impetus for Chinese battery manufacturers to accelerate their research, development, and mass production of sulfide-based SSBs. This, in turn, is expected to expedite the market launch of more advanced and safer EV batteries, potentially solidifying China's global leadership in next-generation battery technologies. Investors and related industries should closely monitor the impact of this expanded material supply capability on the future cost structure and market deployment of solid-state batteries.

Source: https://news.metal.com/en/newscontent/104073984-solid-state-battery-qinghais-3000-mt-per-year-lithium-sulfide-project-completed-filing

Collected: August 28, 2026 | Automated Research System (Gemini API)

#08 Guide to Industrial Solid-State Batteries: Highlighting Lithium Dendrite Suppression and Low-Temperature Performance Advantages

Published August 24, 2026 EIN Presswire USA

OVERVIEW

This article outlines a comprehensive guide to implementing solid-state battery (SSB) technology in industrial manufacturing. SSBs significantly enhance safety and performance because their solid electrolytes effectively block lithium dendrite penetration, enabling the use of lithium metal anodes. Sulfide-based electrolytes, in particular, offer the advantage of maintaining high ionic conductivity even at low temperatures, simplifying thermal management for battery packs and extending operational ranges.

IN DEPTH

Key Findings

Solid-state batteries (SSBs) offer fundamental improvements in both safety and performance compared to conventional liquid-electrolyte lithium-ion batteries. A primary advantage is the solid electrolyte's ability to physically block the penetration of lithium dendrites that typically form on lithium metal anodes. This effectively mitigates the risk of internal short circuits and associated thermal runaway, thereby significantly enhancing battery lifespan and reliability. For industrial applications, this improved safety translates directly into greater operational flexibility and broader applicability in various environments.

Technical / Clinical Details

At the core of solid-state battery technology is the replacement of liquid electrolytes with solid materials. Among these, sulfide-based electrolytes are particularly promising due to their high ionic conductivity. A critical characteristic of these electrolytes is their ability to maintain excellent ionic conductivity even in low-temperature environments where traditional liquid electrolytes would freeze or become sluggish. This capability simplifies the complex thermal management systems required at the battery pack level, contributing to overall system design optimization and cost reduction. Furthermore, being solid, these electrolytes eliminate concerns about liquid leakage and offer enhanced resistance to shock and vibration, which is crucial for rugged industrial uses.

Background & Context

The escalating demand for electric vehicles (EVs), renewable energy storage, and various portable electronic devices has driven an urgent need for safer, higher-performing battery technologies. While lithium-ion batteries are widely adopted, larger EV applications specifically require further advancements in both safety and energy density. Solid-state batteries are viewed as the ultimate solution to these challenges, prompting accelerated research, development, and investment across the industry for their practical implementation. This guide aims to deepen manufacturers' understanding of how to implement this transformative technology into their operations.

Strategic Significance & Outlook

The widespread adoption of solid-state battery technology is poised to bring about a significant transformation in energy storage solutions for manufacturing industries. The enhancements in safety and low-temperature performance are particularly critical for sectors requiring operation under harsh environmental conditions, such such as industrial machinery, robotics, and drones. Simplified thermal management leads to smaller, lighter, and more cost-efficient battery packs, which will facilitate the integration of SSBs into a wider array of applications. Moving forward, reductions in material costs, scale-up of manufacturing processes, and the accumulation of long-term reliability data will be key factors determining the widespread industrial implementation of SSBs.

Source: https://www.einpresswire.com/article/936502973/a-complete-guide-to-implementing-industrial-solid-state-battery-technology-in-manufacturing

#09 U.S. Utility-Scale Battery Capacity Projected to Surge 60% to 24,000 MW in 2026

Published August 26, 2026 Project Finance NewsWire USA

OVERVIEW

The United States is projected to install 24,000 MW of new utility-scale battery capacity in 2026, marking a substantial 60% increase year-over-year. This rapid expansion reflects a strong domestic demand for energy storage solutions to stabilize intermittent power supply from renewable energy sources. This massive deployment signifies a critical advancement towards modernizing and decarbonizing the U.S. electricity grid, enhancing resilience and efficiency.

IN DEPTH

Key Findings

The United States is poised for an unprecedented surge in utility-scale battery deployment, with projections indicating that 24,000 MW of new capacity will be installed in 2026. This represents a remarkable 60% increase compared to the previous year, highlighting an accelerating shift towards robust energy storage solutions. This significant expansion underscores the urgent domestic demand for technologies capable of stabilizing the electricity grid and effectively managing the intermittent power generation from renewable energy sources, such as solar and wind.

Technical / Clinical Details

Utility-scale battery systems are foundational infrastructure for accelerating the integration of renewable energy. These systems provide critical grid services, including peak shifting, frequency regulation, and optimization of transmission capacity, all vital for maintaining grid stability by balancing generation and demand. The continued development of next-generation battery technologies, such as solid-state batteries, promises to make these systems even more efficient, safer, and capable of providing longer-duration energy storage. A capacity of 24,000 MW is equivalent to powering millions of homes for several hours, dramatically improving grid resilience and reliability across the nation.

Background & Context

The U.S. energy infrastructure is undergoing a significant transformation, driven by ambitious decarbonization goals and a transition towards renewable energy. This rapid adoption of battery storage systems is fueled by a confluence of supportive federal policies, ongoing technological innovations, and the decreasing cost of renewable energy generation itself. This 'battery gold rush' is propelled by the dual objectives of combating climate change and achieving greater energy independence. Investments in large-scale battery projects are not only enhancing grid reliability but also creating new jobs and stimulating economic growth in communities across the country.

Strategic Significance & Outlook

The substantial increase in battery capacity in 2026 marks a crucial step towards achieving the U.S.'s clean energy targets. This trend is expected to continue, with further advancements in battery technology—especially the commercialization of long-duration, lower-cost solid-state batteries—poised to expand the economic viability and applicability of utility-scale storage even further. Policymakers, investors, and technology developers must closely monitor the dynamics of this rapidly growing market to adapt to the increasing role of battery storage in shaping the future electricity grid. This trajectory promises a more stable, sustainable, and resilient energy system for the nation.

Source: https://www.projectfinance.law/publications/battery-gold-rush

Collected: August 28, 2026 | Automated Research System (Gemini API)

#10 Geely Accelerates 500 Wh/kg Solid-State Battery Road Tests, Targeting 2027 EV Pilot Deployment

Published August 21, 2026 DigitalToday South Korea

OVERVIEW

Geely Auto has commenced road testing for its next-generation 500 Wh/kg solid-state batteries, aiming for pilot deployment in key EV models by 2027. These advanced batteries target over 1,000 km range per charge and a design life of up to 1 million km. This initiative, supported by material collaboration with Dow Chemical, marks a significant step towards the commercialization of high-performance solid-state technology, intensifying the global race in advanced battery development.

IN DEPTH

Key Findings

Chinese automotive giant Geely Auto has announced it will commence real-world road validation for its next-generation solid-state batteries, boasting an energy density of 500 Wh/kg, starting in 2026. The company aims for pilot deployment in its leading EV brands by 2027. This ambitious timeline underscores Geely's commitment to pushing the boundaries of electric vehicle performance, targeting a driving range exceeding 1,000 km on a single charge and an impressive battery lifespan of up to 1 million km. Strategic material partnerships, including with Dow Chemical, are already in progress, paving the way for eventual mass production.

Technical and Clinical Details

The solid-state battery technology under development by Geely is characterized by significantly higher energy density compared to conventional liquid-electrolyte lithium-ion batteries. The 500 Wh/kg figure represents roughly double the energy density of current mainstream liquid-electrolyte cells, enabling smaller, lighter, and more energy-dense battery packs. This not only offers greater design flexibility for vehicles but also substantially mitigates fire risks associated with flammable liquid electrolytes. Geely plans to integrate this technology across various brands within its holding group, aiming to establish a competitive edge in the rapidly evolving EV market.

Background and Industry Context

Solid-state batteries are widely recognized as the most promising next-generation battery technology, with extensive research and development efforts globally. Traditional lithium-ion batteries face safety concerns due to the flammability of their liquid electrolytes and the risk of dendrite formation leading to short circuits. Solid-state batteries are expected to overcome these challenges, offering superior safety, energy density, and cycle life. Geely's announcement positions Chinese EV manufacturers as potential leaders in the practical application of solid-state technology, intensifying competition with established players like Japan's Toyota and South Korea's Samsung SDI.

Strategic Significance and Outlook

Should Geely successfully implement its solid-state batteries in EVs by 2027, it could fundamentally reshape the electric vehicle landscape. The prospect of extended driving ranges becoming commonplace and reduced dependence on extensive charging infrastructure could accelerate global EV adoption. However, significant challenges remain in solid-state battery mass production, including cost, scalability, and long-term durability. How Geely addresses these hurdles and transitions to full commercialization will be closely watched by the entire automotive industry, with profound implications for future electric mobility.

Source: https://www.digitaltoday.co.kr/en/view/95195/geely-validates-500-wh-kg-solid-state-battery-in-road-tests-plans-pilot-use-in-2027

Collected: August 28, 2026 | Automated Research System (Gemini API)

#11 China's Leading Battery Makers Target 2027 Solid-State Battery Trial Production, Intensifying Race with BYD and CATL

Published August 20, 2026 Car News China China

OVERVIEW

Several major Chinese battery manufacturers are intensifying their efforts to achieve trial production of all-solid-state batteries by 2027. Dreame Technology has announced the most aggressive timeline, aiming for limited shipments of its 450 Wh/kg 'Galaxy Crystal' cells in 2026, with full commercial production targeted for 2027. Meanwhile, Farasis Energy and EVE Energy are also setting ambitious goals for 2027 and 2026, respectively, focusing on sulfide-based solid-state battery development, accelerating innovation and market entry in this critical sector.

IN DEPTH

Key Findings

Multiple prominent Chinese battery manufacturers are reportedly accelerating their efforts, targeting trial production and comprehensive validation of all-solid-state batteries by 2027. Notably, Dreame Technology has unveiled an aggressive plan to begin limited shipments of its 'Galaxy Crystal' cells, boasting an energy density of up to 450 Wh/kg, in 2026, with full commercial production slated for 2027. This signifies a broadening of competition in the solid-state battery race beyond established giants like BYD and CATL, poised to significantly propel market development.

Technical and Clinical Details

Dreame Technology's 'Galaxy Crystal' cells are distinguished by their high energy density of 450 Wh/kg, promising substantial improvements in electric vehicle (EV) range compared to conventional liquid-electrolyte lithium-ion batteries. The company intends to establish a pilot line with an annual production capacity of 1 GWh in 2026 for initial low-volume manufacturing. Concurrently, Farasis Energy and EVE Energy are concentrating on sulfide-based solid-state battery development. Farasis targets trial production by 2027, while EVE Energy aims for sample provision in 2026. Sulfide electrolytes offer high ionic conductivity but present manufacturing complexities and air stability challenges. These manufacturers are pursuing innovations in both material science and manufacturing processes to overcome these hurdles.

Background and Industry Context

All-solid-state batteries are heralded as a transformative next-generation technology designed to surpass the limitations of current lithium-ion batteries. By replacing flammable liquid electrolytes with solid materials, these batteries promise enhanced safety (reduced fire risk), higher energy density, extended cycle life, and improved fast-charging capabilities. The Chinese government views the development of the EV industry as a national strategic priority and has invested heavily in solid-state battery R&D. The recent announcements of concrete production targets by multiple Chinese firms underscore China's strong ambition to play a leading role in the commercialization of solid-state battery technology, further augmenting its influence in the global battery supply chain.

Strategic Significance and Outlook

The realization of trial production of solid-state batteries by Chinese companies by 2027 could dramatically enhance EV performance, potentially driving broader adoption among consumers. Eliminating 'range anxiety' could usher in a new phase of growth for the EV market. However, the transition from trial production to large-scale commercial manufacturing entails numerous challenges, including cost reduction, quality control, and supply chain establishment. The speed and efficiency with which these companies address these challenges will be crucial in determining their market competitiveness. The trajectory of Chinese companies in the global automotive and battery industries remains a critical area of focus.

Source: https://carnewschina.com/2026/08/20/chinas-battery-makers-target-2027-solid-state-cell-trial-production-alongside-byd-catl-geely/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#12 China-Led Global Solid-State Battery Standard Approved by IEC, Signaling Era of 500Wh/kg Batteries

Published August 28, 2026 Shanghai Metals Market (SMM) China

OVERVIEW

The first global international standard for all-solid-state batteries, led by China, has been approved by the IEC, establishing unified technical benchmarks for the industry. Concurrently, Saike Power secured hundreds of millions of RMB in funding to accelerate R&D in sulfide electrolytes, high-safety cells, and solid-state pilot production line expansion. Further bolstering safety, GaoNeng ShuZao's 20Ah sulfide cell successfully passed a nail penetration test without ignition or explosion, significantly contributing to enhanced solid-state battery safety.

IN DEPTH

Key Findings

China has successfully spearheaded the approval of the world's first international standard for all-solid-state batteries by the International Electrotechnical Commission (IEC). This landmark achievement is expected to establish global unified benchmarks for the design, manufacturing, and evaluation of solid-state batteries, thereby accelerating product development and international trade. Domestically, Saike Power has successfully secured hundreds of millions of RMB in funding, earmarked for the expansion of its sulfide electrolyte research, high-safety cell development, solid-state battery pilot production lines, and overall material system R&D. Furthermore, GaoNeng ShuZao's 20Ah sulfide all-solid-state cell demonstrated exceptional safety by passing a stringent nail penetration test without any signs of ignition or explosion, marking a significant advancement in intrinsic safety.

Technical and Clinical Details

The international standard approved by the IEC encompasses a wide array of aspects, including performance evaluation methods, safety requirements, and interface designs for all-solid-state batteries. This standardization empowers manufacturers to develop and test products against consistent criteria, ultimately enhancing product reliability and safety for consumers. Saike Power's substantial funding is a crucial step towards the commercialization of sulfide-based solid-state battery technology. While sulfide solid electrolytes offer high ionic conductivity, they present challenges in air stability and manufacturing costs, which the company aims to overcome. GaoNeng ShuZao's successful nail penetration test explicitly demonstrates the inherent high safety of sulfide-based solid-state batteries, addressing one of the major barriers to their practical adoption.

Background and Industry Context

All-solid-state batteries are heralded as the next-generation power source poised to overcome the limitations of conventional liquid-electrolyte lithium-ion batteries, particularly concerning safety, energy density, and cycle life. Global automotive manufacturers and battery companies are engaged in fierce development competition. China, leveraging the immense scale of its electric vehicle (EV) market and extensive state investment in battery technology, is actively seeking to establish leadership in this domain. The establishment of international standards is indispensable for technological diffusion and maturity, and China's leadership in this process symbolizes its growing influence in the global battery industry. Safety concerns remain a significant obstacle to widespread EV adoption, and concrete safety demonstrations, such as GaoNeng ShuZao's achievement, directly build consumer trust.

Strategic Significance and Outlook

The IEC's approval of international standards for solid-state batteries can be interpreted as the commencement of a countdown to an era where 500 Wh/kg high-performance solid-state batteries transition from 'dream' to 'reality.' Standardized criteria will streamline R&D, facilitate supply chain establishment, and ultimately contribute to mass production and cost reduction. Investments in companies like Saike Power accelerate technological advancements, and the success of safety tests like GaoNeng ShuZao's will bolster market confidence in the technology. International attention is now focused on how these advancements will accelerate the adoption of solid-state batteries across diverse applications, including electric vehicles, renewable energy storage, and portable devices.

Source: https://news.metal.com/en/newscontent/104085918-solid-state-battery-weekly-global-standards-set-by-china-countdown-to-the-500whkg-era

Collected: August 28, 2026 | Automated Research System (Gemini API)

#13 Samsung SDI and Volkswagen Accelerate Solid-State Battery Development Towards 2027 Mass Production Targets

Published August 20, 2026 SoylentNews USA

OVERVIEW

Samsung SDI is operating pilot production lines for its oxide-based all-solid-state anode-less/lithium metal batteries, developed in collaboration with BMW, targeting mass production by 2027. Concurrently, Volkswagen Group's PowerCo is partnering with QuantumScape to develop a novel cell design featuring a pure copper current collector, solid ceramic separator, and liquid catholyte. Industry consensus suggests that widespread adoption of all-solid-state batteries is still some years away, with semi-solid-state solutions likely to precede them in the market.

IN DEPTH

Key Findings

Samsung SDI, in collaboration with BMW, is actively accelerating the development of oxide-based all-solid-state anode-less/lithium metal batteries, which incorporate high-nickel cathodes. Pilot production lines are already operational, with a firm target for mass production set for 2027. In parallel, PowerCo, the battery arm of the Volkswagen Group, is pursuing a strategic partnership with QuantumScape to advance a new cell design. This innovative architecture combines a pure copper current collector, a solid ceramic separator, and a proprietary liquid catholyte. Despite these advancements, the prevailing industry consensus indicates that widespread commercialization of all-solid-state batteries is still several years distant, with semi-solid-state batteries expected to gain market traction sooner as an intermediate solution.

Technical and Clinical Details

Samsung SDI’s strategy emphasizes maximizing energy density through an anode-less design coupled with high-nickel cathodes. Oxide-based solid electrolytes are favored for their superior stability and relative ease of manufacturing compared to sulfide-based alternatives. The joint development by PowerCo and QuantumScape leverages a pure copper current collector and solid ceramic separator to effectively suppress dendrite formation and reduce the risk of internal short circuits. A notable aspect of their cell design is the inclusion of a 'liquid catholyte.' This suggests a hybrid approach, not strictly 'all-solid-state,' which aims to balance high energy density with enhanced safety while potentially easing the transition from existing liquid-electrolyte technologies.

Background and Industry Context

The burgeoning electric vehicle (EV) market is driving intense demand for safer and higher-performing batteries. All-solid-state batteries have long been considered the ultimate solution to address the flammability risks and energy density limitations inherent in current liquid-electrolyte lithium-ion batteries. European automotive giants like BMW and Volkswagen are strategically partnering with leading battery suppliers to secure their competitiveness in the future EV market. Samsung SDI, in particular, has designated solid-state batteries as its 'game-changer' technology, pushing aggressively for market introduction. However, persistent challenges related to cost, scalability, and long-term durability remain. Consequently, semi-solid-state batteries are increasingly seen as a vital bridging technology.

Strategic Significance and Outlook

The endeavors by Samsung SDI and the PowerCo/QuantumScape collaboration showcase diverse approaches to the commercialization of solid-state battery technology. The 2027 mass production targets underscore steady technological progress; however, deeper market penetration will require further time and significant effort. Crucially, reducing manufacturing costs and ensuring reliability will be decisive factors for widespread adoption. The prior proliferation of semi-solid-state batteries is expected to incrementally improve EV performance and safety during the period until all-solid-state technology fully matures. The coming years will be a critical juncture as the industry closely monitors how these advanced battery technologies evolve and are embraced by the market.

Source: https://soylentnews.org/article.pl?sid=26/08/19/0352227

Collected: August 28, 2026 | Automated Research System (Gemini API)

#14 TDK Unveils Multilayer Ceramic Chip Battery with Oxide Solid-State Electrolyte, Achieving Enhanced Safety and Miniaturization

Published August 20, 2026 TechInsights Canada

OVERVIEW

TDK has introduced a groundbreaking multilayer ceramic chip battery utilizing an oxide-based all-solid-state electrolyte, significantly enhancing safety by eliminating flammable liquid electrolytes. This technology overcomes safety risks inherent in conventional liquid lithium-ion batteries and is applicable across a wide range of uses from consumer electronics to electric vehicles. Leveraging advanced materials and manufacturing processes, TDK's solution is expected to offer a scalable path towards mass production of solid-state batteries.

IN DEPTH

Key Findings

TDK has unveiled its pioneering multilayer ceramic chip battery technology, based on an oxide all-solid-state electrolyte. The paramount achievement of this technology is the complete eradication of safety risks associated with flammable liquid electrolytes by entirely replacing them with a solid-state alternative. This advancement marks a significant leap in battery safety and reliability, paving the way for innovative applications across a broad spectrum of sectors, including consumer electronics and electric vehicles (EVs).

Technical and Clinical Details

TDK's multilayer ceramic chip battery employs an oxide-based solid electrolyte, which combines high ionic conductivity with excellent chemical stability. The use of ceramic materials physically suppresses dendrite formation, thereby mitigating the risk of internal short circuits. This technology enables the simultaneous achievement of miniaturization and high reliability, making it particularly suitable for space-constrained applications such as wearable devices and IoT devices. Furthermore, the multilayer structure ensures high energy density while providing robust packaging. Advanced manufacturing techniques have also been developed to facilitate a smooth transition from traditional liquid-electrolyte battery production processes to this all-solid-state technology, addressing critical challenges for mass production.

Background and Industry Context

In today's battery market, ensuring safety is a pressing concern alongside the drive for higher energy density. Particularly with the expansion of the EV market, the risk of battery fires remains a significant worry for consumers. All-solid-state batteries are anticipated as the next-generation technology that fundamentally resolves these safety issues, spurring intense global competition among companies. TDK, leveraging its long-standing expertise in materials technology and manufacturing know-how in the electronic components sector, possesses a particular strength in oxide-based solid electrolytes. The company's track record and this new announcement are drawing significant industry attention as a crucial step towards the practical implementation of solid-state batteries.

Strategic Significance and Outlook

TDK's multilayer ceramic chip battery, by combining safety and performance, holds immense potential to significantly contribute to extended operating times for portable devices and enhanced reliability for EVs. Should this technology mature further and achieve cost-effective mass production, its market impact could be transformative. Future applications envision higher-capacity, larger battery packs, with potential expansion into energy storage systems. The industry is keenly watching how this innovative technology will elevate overall battery safety standards and contribute to the realization of a sustainable society.

Source: https://www.techinsights.com/blog/tdk-multilayer-ceramic-chip-battery-solid-state-battery-technology-power-future

Collected: August 28, 2026 | Automated Research System (Gemini API)

#15 Geely Sets 2027 EV Pilot for 500 Wh/kg Solid-State Batteries, Eyes Volvo Integration

Published August 24, 2026 GlobalChinaEV China

OVERVIEW

Geely Holding is steadily advancing its plan to pilot 500 Wh/kg solid-state batteries in its EV brands starting in 2027, with potential integration into Volvo models. These batteries target over 1,000 km range per charge and a design life exceeding 1 million km. Geely expects to finalize the first production packs by the end of 2026 for vehicle validation, aligning with its aggressive development roadmap for high-performance electric vehicles.

IN DEPTH

Key Findings

Chinese automotive giant Geely Holding has announced it is making steady progress towards piloting its all-solid-state batteries, boasting an impressive energy density of up to 500 Wh/kg, in its electric vehicle brands starting in 2027. This next-generation battery aims for an ambitious driving range exceeding 1,000 km on a single charge and a design life extending beyond 1 million km. Furthermore, Geely is reportedly considering deploying this innovative battery technology across its premium brand, Volvo, thereby seeking to establish a significant competitive advantage in the high-performance EV market.

Technical and Clinical Details

The solid-state battery under development by Geely aims to achieve an energy density of 500 Wh/kg, approximately double that of current lithium-ion batteries. This significant advancement is expected to dramatically extend the range of EVs, effectively alleviating 'range anxiety' that has been a long-standing concern for electric vehicle adoption, and enabling more practical long-distance travel. Crucially, as solid-state batteries do not contain liquid electrolytes, they inherently possess a much lower risk of thermal runaway and ignition, offering a substantial safety benefit. According to Geely's roadmap, the first production packs are anticipated to be completed by the end of 2026, followed by comprehensive in-vehicle validation, marking the transition of R&D into tangible product realization.

Background and Industry Context

The electric vehicle market is undergoing rapid expansion, with battery technology evolution serving as a critical enabler of this growth. Key performance indicators such as energy density, safety, charging speed, and lifespan profoundly influence consumer choices for EVs. All-solid-state batteries are considered a potential 'game-changer' technology, capable of comprehensively addressing these challenges, leading to intense development competition among global automakers and battery companies. Geely's proactive approach to developing and integrating solid-state battery technology internally reflects a broader trend among major Chinese automotive groups to secure battery supply stability and pursue technological vertical integration, thereby enhancing China's presence in the global EV market.

Strategic Significance and Outlook

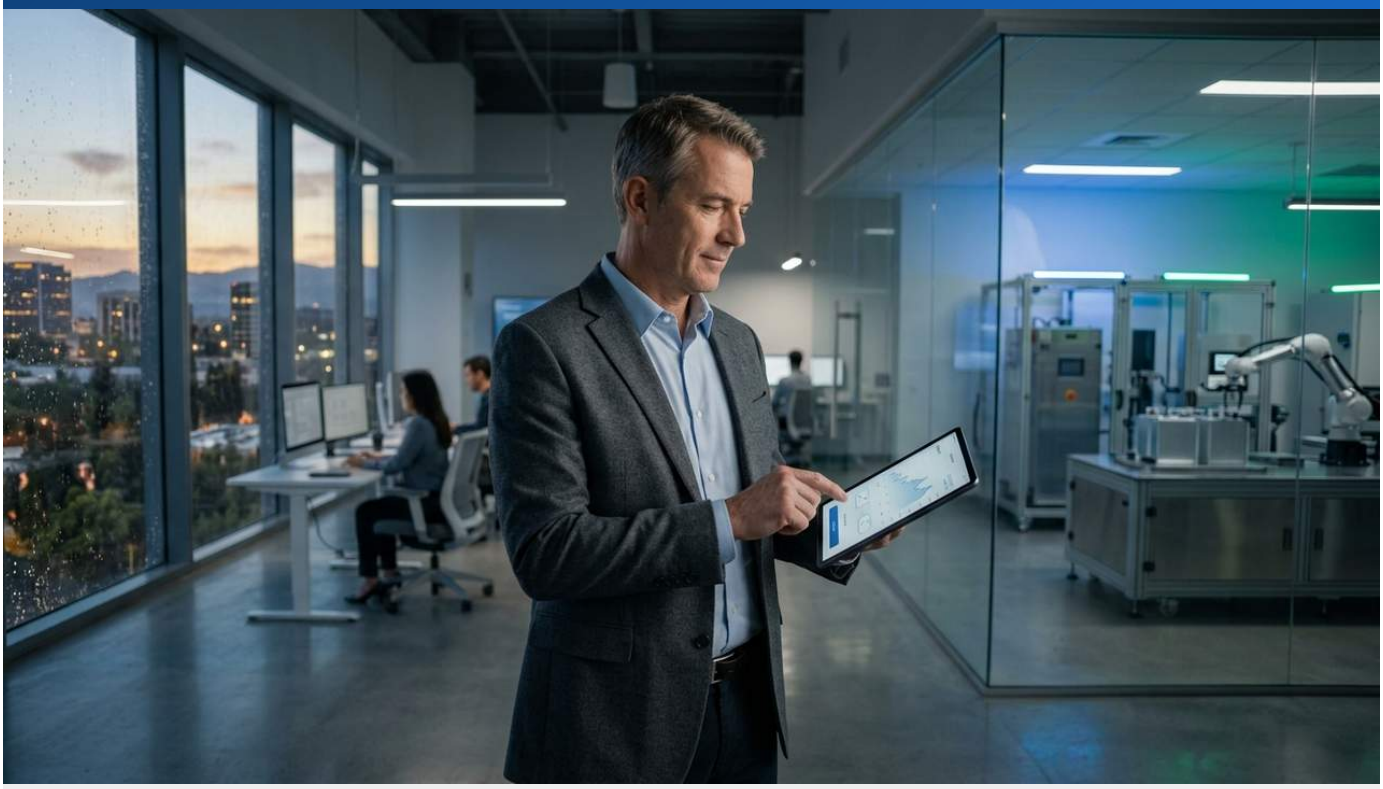
Geely's plan to pilot 500 Wh/kg solid-state batteries in EVs by 2027 is poised to significantly elevate electric vehicle performance and stimulate market expectations. If successful integration into the Volvo brand materializes, it could signal the potential for solid-state batteries to become a standard technology even in the premium EV segment. However, transitioning from pilot deployment to large-scale mass production and achieving cost competitiveness still presents numerous challenges. The complexity of manufacturing processes, securing stable material supply, and bridging the cost gap with existing liquid-electrolyte batteries will be critical determinants of future success. Geely's endeavors hold immense significance in shaping the future of EVs, and their progress is expected to have a substantial impact across the industry.

Source: https://www.globalchinaev.com/post/geely-to-pilot-500-whkg-solid-state-ev-batteries-in-2027-eyes-volvo

Collected: August 28, 2026 | Automated Research System (Gemini API)

#16 QuantumScape CTO Sells Over 40,000 Shares to Fulfill Tax Obligations

Published August 20, 2026 Stock Titan USA



OVERVIEW

QuantumScape Corp's Chief Technology Officer, Timothy Holme, sold a total of 41,876 Class A shares on August 19, 2026, under a pre-arranged Rule 10b5-1 trading plan. This transaction was executed to meet tax obligations, and Holme retains a significant equity stake in the company. Such planned sales are standard practice for corporate insiders.

IN DEPTH

Key Findings

Timothy Holme, the Chief Technology Officer (CTO) of QuantumScape Corp, executed the sale of a total of 41,876 Class A common shares on August 19, 2026, according to a filing with the U.S. Securities and Exchange Commission (SEC). This transaction was conducted under a pre-established Rule 10b5-1 trading plan. The sold shares comprised 21,531 Class A shares converted from Class B shares and an additional 20,345 Class A shares directly held by Mr. Holme.

Technical / Clinical Details

This insider trading report does not contain any technical details or clinical trial results related to QuantumScape's solid-state battery technology.

Background & Context

A Rule 10b5-1 trading plan allows corporate insiders to pre-arrange stock trades at a time when they are not in possession of material nonpublic information, thereby preventing insider trading based on privileged knowledge. Mr. Holme's stock sale is explicitly stated to have been conducted under such a plan to cover tax obligations. While insider stock sales can sometimes attract market scrutiny as potential signals regarding a company's health or future prospects, in this instance, the transaction's specific purpose of tax fulfillment and Mr. Holme's continued substantial holdings suggest it should not be interpreted as a loss of confidence in QuantumScape's technological development or business outlook.

Strategic Significance & Outlook

QuantumScape remains a pivotal player in the development of all-solid-state batteries, and its technological advancements hold the potential to significantly impact the electric vehicle industry. While executive stock transactions can generate short-term market speculation, trades executed under Rule 10b5-1 plans are generally considered a normal part of corporate operations. Investors are advised to focus on substantive information, such as the company's progress in technology development, its roadmap towards commercialization, and key partnership developments, rather than on individual insider trading activities.

Source: https://www.stocktitan.net/sec-filings/QS/form-4-quantum-scape-corp-insider-trading-activity-beb8daffe309.html

Collected: August 28, 2026 | Automated Research System (Gemini API)

#17 New Patent for Solid-State Battery Manufacturing Utilizing Graphene Aims for Enhanced Safety, Miniaturization, and Production Efficiency

Published August 20, 2026 Justia Patents USA

OVERVIEW

A new patent describes a method for manufacturing all-solid-state batteries without a liquid electrolyte layer, assembling a cathode containing graphene, sulfur, and phosphorus, an anode with silicon and lithium deposited on a copper collector, and a separator with ion-conductive materials. This innovative patent seeks to simplify manufacturing processes in next-generation battery factories, enabling safer, smaller, and easier-to-produce high-performance batteries. Advances in material science and structural design hold the potential to accelerate the commercialization of solid-state batteries.

IN DEPTH

Key Findings

A novel patent outlining a method for manufacturing all-solid-state batteries, completely devoid of a liquid electrolyte layer, has been published. This patented technology is characterized by assembling a specific cathode material containing graphene, sulfur, and phosphorus; an anode material comprising silicon and lithium deposited on a copper current collector; and a separator layer consisting of ion-conductive materials and a solvent. The objective of this manufacturing process is to significantly simplify production in next-generation battery factories, thereby realizing high-performance solid-state batteries that are safer, more compact, and easier to manufacture.

Technical / Clinical Details

The core of this patent lies in the incorporation of materials such as graphene, sulfur, and phosphorus into the cathode to achieve high energy density and superior cycle stability. Graphene, with its exceptional electrical conductivity and mechanical strength, is expected to enhance battery performance. For the anode, silicon and lithium are utilized, promising high capacity—a critical factor for increasing the energy density of next-generation batteries. Most importantly, the complete elimination of liquid electrolyte and the adoption of a solid separator made of ion-conductive materials fundamentally address the issues of thermal runaway and dendrite formation prevalent in conventional liquid-electrolyte batteries, contributing to enhanced safety and extended lifespan. Furthermore, eliminating the liquid electrolyte injection step is expected to simplify the manufacturing process and improve production efficiency.

Background & Context

All-solid-state batteries are anticipated to be the next-generation energy storage devices for a wide range of applications, including electric vehicles (EVs), portable electronic devices, and stationary energy storage systems. Conventional liquid-electrolyte lithium-ion batteries face safety challenges such as the flammability of their electrolytes and short circuits due to dendrite formation, which represent significant barriers to EV adoption. This patent aims to resolve these issues and streamline manufacturing processes, marking a crucial step towards the practical implementation of solid-state batteries. The utilization of advanced materials like graphene reflects the industry trend of breaking through existing technological limitations to achieve both performance improvements and cost reductions.

Strategic Significance & Outlook

If this patented technology is successfully commercialized, it has the potential to reduce manufacturing costs and improve production efficiency of all-solid-state batteries, thereby accelerating their market adoption. The enhanced safety will be a major appeal for EV consumers, further boosting the growth of the EV market. Additionally, miniaturization and high energy density will contribute to the advancement of wearable devices and IoT applications. However, before commercial production, numerous challenges remain, including material scale-up, manufacturing process stabilization, and long-term reliability validation. The extent to which this technology can contribute to the realization of the '500 Wh/kg era' for solid-state batteries, along with its future development and demonstration, will be closely watched.

Source: https://patents.justia.com/patent/20260245865

#18 QuantumScape Co-Founder & CTO Sells Entire Trust Holdings: Pre-Arranged Trading Plan Executed

Published August 27, 2026 The Motley Fool USA

OVERVIEW

Timothy Holme, Co-Founder and CTO of QuantumScape Corporation, sold 12,723 shares of Class A common stock held by his trust on August 21, 2026. This transaction was executed under a Rule 10b5-1 trading plan adopted on June 5, 2025, adhering to insider trading regulations. Such pre-arranged sales are standard practice for executives to divest shares under predefined conditions while minimizing market impact.

IN DEPTH

Key Findings

Timothy Holme, the Co-Founder and Chief Technology Officer (CTO) of QuantumScape Corporation, publicly disclosed the sale of 12,723 shares of Class A common stock held through his trust on August 21, 2026, according to a filing with the U.S. Securities and Exchange Commission (SEC). This transaction was carried out in accordance with a Rule 10b5-1 trading plan that was pre-adopted on June 5, 2025.

Technical / Clinical Details

This news regarding a stock sale does not include any technical specifics, research outcomes, or clinical trial data.

Background & Context

A Rule 10b5-1 trading plan allows corporate executives to pre-establish trading schedules and conditions for stock sales, designed to prevent them from profiting from undisclosed material nonpublic information. Mr. Holme's recent stock sale falls under this plan and is likely part of his personal financial strategy, which could include tax obligations or asset diversification. While insider stock sales can often spark various speculations among investors, transactions made under a Rule 10b5-1 plan are generally regarded as a routine part of financial management and do not necessarily signal a negative outlook for the company's future prospects. QuantumScape is a high-profile company in the development of all-solid-state batteries, and the activities of its executives consistently draw market attention.

Strategic Significance & Outlook

QuantumScape continues its research and development towards the commercialization of solid-state batteries, a technology with the potential to revolutionize the electric vehicle industry. The CTO's recent stock sale was executed through a mechanism designed to ensure corporate transparency while allowing executives to manage their personal financial plans. Investors should focus on the underlying context of individual insider trades and prioritize key business indicators such as the company's long-term technological development, mass production strategy, and partnership progress. Given Mr. Holme's continued critical technical leadership within QuantumScape, this transaction is not expected to directly impact the company's technological strategy.

Source: https://www.fool.com/coverage/filings/2026/08/26/quantumscape-co-founder-and-cto-sells-his-trust-s-entire-stake-in-the-company-for-usd76-465/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#19 QuantumScape CEO Divests 80,000 Shares to Cover RSU-Related Tax Obligations

Published August 21, 2026 The Motley Fool USA

OVERVIEW

Srinivasan Sivaram, CEO of QuantumScape Corporation, disposed of 81,752 shares of Class A common stock on August 18, 2026. This transaction was solely to cover withholding tax obligations arising from the vesting of Restricted Stock Units (RSUs) and does not reflect an investment decision. Sivaram retains substantial holdings in the company, maintaining executive commitment.

IN DEPTH

Key Findings

Srinivasan Sivaram, the Chief Executive Officer (CEO) of QuantumScape Corporation, publicly disclosed the disposition of 81,752 shares of Class A common stock on August 18, 2026, as per filings with the U.S. Securities and Exchange Commission (SEC). This specific stock transaction was executed to fulfill withholding tax obligations associated with the vesting of his Restricted Stock Units (RSUs).

Technical / Clinical Details

This news regarding the CEO's stock disposition does not include any technical specifics, research outcomes, or clinical trial data.

Background & Context

Restricted Stock Units (RSUs) are a common form of equity compensation for employees and executives, which vest and convert into company stock upon meeting certain conditions, such as tenure. At the time of vesting, income tax, in the form of withholding tax, is typically levied under U.S. tax laws. Mr. Sivaram's recent stock disposition was automatically triggered and executed to satisfy these tax obligations; therefore, it does not reflect the CEO's investment judgment regarding the company's future prospects. The transaction fully complies with insider trading regulations, ensuring transparency. QuantumScape is a closely watched company developing innovative all-solid-state battery technology, and the actions of its CEO are consistently of high interest to market participants.

Strategic Significance & Outlook

QuantumScape is pursuing the ambitious goal of commercializing all-solid-state batteries and is accelerating its research, development, and preparation for mass production. The CEO's stock disposition is part of a standard procedure designed to balance executive personal financial planning with corporate transparency. Investors should continue to focus on the fundamental drivers of the business, such as technological advancements, partnerships with key customers, and the long-term growth strategy, rather than on individual tax-related transactions. Mr. Sivaram's continued substantial holdings in the company indicate that his commitment to QuantumScape remains strong.

Source: https://www.fool.com/coverage/filings/2026/08/21/what-does-the-quantumscape-ceo-s-sale-of-nearly-82-000-shares-mean-for-investors/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#20 Geely Announces 2027 Solid-State Battery Pilot, Targeting 1,000km+ Range and Extended Lifespan

Published August 24, 2026 Just Auto UK

OVERVIEW

Geely Holding has announced plans to pilot solid-state batteries in its subsidiary EV brands starting in 2027. These solid-state batteries aim to achieve an energy density of up to 500 Wh/kg, potentially enabling electric vehicles to exceed 1,000 kilometers in range and offer extended lifespan. Geely is also collaborating with Dow Chemical Company on developing adhesives for solid-state cells, strengthening its supply chain for mass production.

IN DEPTH

Key Findings

Chinese automotive giant Geely Holding has unveiled plans to commence pilot operations of solid-state batteries in its subsidiary electric vehicle (EV) brands starting in 2027. The company states that the solid-state batteries under development are capable of achieving an energy density of up to 500 Wh/kg. This breakthrough is expected to enable EVs to achieve driving ranges exceeding 1,000 kilometers on a single charge and contribute to significantly longer battery lifespans. This strategic initiative is poised to enhance Geely's competitiveness in the rapidly evolving EV market.

Technical / Clinical Details

The 500 Wh/kg energy density targeted by Geely represents approximately double that of current high-performance liquid-electrolyte lithium-ion batteries, promising a dramatic increase in EV driving range. Solid-state batteries, by replacing liquid electrolytes with solid materials, substantially reduce the risk of thermal runaway, thereby enhancing safety. Furthermore, they are expected to enable operation at higher voltages, leading to improved fast-charging capabilities. For the mass production of these solid-state batteries, Geely recognizes the critical importance of 'adhesive' technology and is jointly developing solid-state cell adhesives with Dow Chemical Company. Superior adhesive technology is essential to reduce interfacial resistance between electrodes and solid electrolytes and ensure long-term stability.

Background & Context

As the adoption of electric vehicles accelerates, battery performance and safety remain among the most critical challenges. All-solid-state batteries are considered a revolutionary next-generation technology poised to fundamentally address these issues, prompting fierce development competition among leading global automakers and battery suppliers. China, driven by its expanding EV market and robust government support, aims to play a leading role in this sector. A major automaker like Geely collaborating directly with battery material suppliers on technological development is a key strategy to accelerate vertical integration of the supply chain and secure future technological advantages. This approach enhances both the stability of battery supply and cost competitiveness.

Strategic Significance & Outlook

Should Geely successfully pilot solid-state batteries in 2027, it would significantly alleviate consumer concerns regarding EV range, thereby stimulating further growth in the EV market. Adoption is particularly anticipated in segments demanding high-performance batteries, such as long-haul trucks and luxury EVs. However, the path from pilot deployment to large-scale commercial production remains extensive, requiring the overcoming of challenges such as manufacturing cost reduction, process complexity, quality control, and stable material supply. The collaboration between Geely and Dow Chemical Company demonstrates concrete solutions to these challenges, attracting industry attention as an accelerator for the practical application of solid-state batteries.

Source: https://www.just-auto.com/news/geely-shoots-for-2027-solid-state-batteries-ssbs-pilots/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#21 Toyota Motor Corporation Publishes New Patent for All-Solid-State Battery and Manufacturing Method

Published August 20, 2026 Justia Patents USA

OVERVIEW

TOYOTA JIDOSHA KABUSHIKI KAISHA has published a new patent application detailing an all-solid-state battery and its manufacturing method. The patent describes a fundamental battery configuration comprising a positive electrode layer, a solid electrolyte layer, and a negative electrode layer in a specific sequence, aiming to realize more efficient and reliable next-generation batteries. This technology is expected to play a crucial role in Toyota's battery strategy, particularly in the electric vehicle sector.

IN DEPTH

Key Findings

TOYOTA JIDOSHA KABUSHIKI KAISHA (Toyota Motor Corporation) has disclosed a new patent application concerning the construction and manufacturing method of an all-solid-state battery. This patent details a fundamental structure for solid-state batteries, built by stacking a positive electrode layer, a solid electrolyte layer, and a negative electrode layer in a specific order. This indicates Toyota's continuous efforts towards the practical application of next-generation battery technology designed to enhance the range and safety of electric vehicles.

Technical / Clinical Details

The patent application proposes a structure where three main components—the positive electrode layer, the solid electrolyte layer, and the negative electrode layer—are intimately positioned. The solid electrolyte layer aims to eliminate the flammability risks of conventional liquid electrolytes and suppress dendrite formation, thereby contributing to enhanced battery safety and extended lifespan. The patent's focus is presumed to be on manufacturing processes that ensure excellent interfacial contact between these layers and maximize ion conduction efficiency. Specifically, it likely details aspects such as material selection for each layer, film deposition techniques, and post-stacking treatment methods. These technologies are crucial for realizing all-solid-state batteries with high energy density and superior cycle performance.

Background & Context

All-solid-state batteries are considered a 'game-changer' technology, expected to dramatically improve the performance of electric vehicles (EVs), leading to fierce development competition among global automakers and battery companies. Toyota Motor Corporation, in particular, has long focused on research and development in solid-state batteries, holding numerous patents in this field. This patent disclosure suggests that Toyota is pursuing technological breakthroughs across a wide range of areas, from material science to manufacturing processes, for the mass production of solid-state batteries. The release of patent information can be seen as a strategic move to clarify technological direction and solidify its leadership in the future EV market.

Strategic Significance & Outlook

This new patent from Toyota marks a significant step towards the mass production of all-solid-state batteries and, by extension, the widespread adoption of electric vehicles. Enhanced safety and extended range will deepen consumer trust in EVs and accelerate market growth. However, numerous challenges remain before the patented technology can be applied to commercial production, including reducing manufacturing costs, scaling up production, and validating long-term reliability. The automotive industry worldwide is closely watching how Toyota will overcome these challenges and achieve its anticipated market launch of EVs equipped with solid-state batteries from the late 2020s.

Source: https://patents.justia.com/patent/20260245870

#22 QuantumScape CDO Sells Shares Valued at $197K to Fulfill RSU Tax Obligations

Published August 22, 2026 The Motley Fool USA

OVERVIEW

Mohit Singh, Chief Development Officer (CDO) of QuantumScape Corporation, sold 34,304 shares of Class A common stock on August 18, 2026. This transaction, valued at approximately $197,000, was conducted to cover tax obligations arising from the vesting of Restricted Stock Units (RSUs) and does not reflect his investment sentiment. Singh continues to hold a critical role within QuantumScape.

IN DEPTH

Key Findings

Mohit Singh, the Chief Development Officer (CDO) of QuantumScape Corporation, disclosed the sale of 34,304 shares of Class A common stock on August 18, 2026, according to a filing with the U.S. Securities and Exchange Commission (SEC). This transaction, valued at approximately $197,000, was specifically executed to cover tax obligations incurred from the vesting of his Restricted Stock Units (RSUs).

Technical / Clinical Details

This article discussing an insider trading event does not contain specific details regarding QuantumScape's technical developments or research findings.

Background & Context

While stock sales by corporate executives can often trigger various market speculations, the fulfillment of tax obligations associated with Restricted Stock Unit (RSU) vesting is a common financial management activity for officers of publicly traded companies. When RSUs vest and convert into shares, their value is typically taxed as income, and companies often withhold or sell a portion of the shares to cover these taxes. Mr. Singh's recent transaction falls under this standard tax-related process and does not indicate a negative outlook on QuantumScape's future prospects. QuantumScape, a company at the forefront of developing innovative all-solid-state battery technology, consistently draws significant attention regarding its key executives' activities.

Strategic Significance & Outlook

QuantumScape is actively pursuing research, development, and partnership building towards the commercialization of solid-state batteries. This stock sale by Mr. Singh, who holds a crucial role as Chief Development Officer, does not directly impact the company's business strategy or technological roadmap. Investors should continue to focus on information that contributes to fundamental value creation, such as technological breakthroughs, progress in pilot production, and partnerships with major automakers, rather than on individual tax-related transactions. QuantumScape is expected to remain a critical player in the next-generation EV battery market.

Source: https://www.fool.com/coverage/filings/2026/08/22/a-quantumscape-insider-filing-involves-usd197-000-of-shares-here-s-how-it-ties-to-the-company-s-next-platform/

#23 Solid-State Battery Patent Analysis Report Reveals 2022 Peak in Filings, Cell Chemistry Dominance

Published August 25, 2026 Patsnap Research UK

OVERVIEW

A new report analyzing solid-state battery patent data from 2015-2026 reveals that patent filings peaked in 2022 and subsequently decreased by 51% between 2021 and 2024. Patent activity is heavily concentrated in the cell chemistry domain, with the H01M classification accounting for 71.5% of all records. This trend indicates a strong focus on material science and structural design in solid-state battery research and development, potentially accelerating their commercialization.

IN DEPTH

Key Findings

According to a recent report published by Patsnap Research, an analysis of solid-state battery-related patent data from 2015 to 2026 indicates that the number of patent applications peaked in 2022, followed by a significant 51% decrease between 2021 and 2024. The report highlights that patent activity is overwhelmingly skewed towards cell chemistry, with the H01M classification (electrochemical devices, specifically batteries) accounting for a substantial 71.5% of all recorded filings.

Technical / Clinical Details

The observed decrease in patent applications could be attributed to several factors. Firstly, it might suggest a transition from broad exploratory patenting in the initial R&D phase to a more consolidated approach focused on specific technologies nearing commercialization. Alternatively, it could point to the high technical barriers remaining in the field or strategic decisions by some companies to limit patent disclosures. The concentration of patent activity in cell chemistry underscores that the primary factors determining solid-state battery performance (energy density, cycle life, safety) lie in electrode materials, solid electrolytes, and their interfacial designs. This likely includes patents related to the development of sulfide, oxide, and polymer solid electrolytes, as well as lithium metal anodes and high-capacity cathode materials.

Background & Context

All-solid-state batteries are widely heralded as the next-generation technology poised to surpass the limitations of existing lithium-ion batteries, generating significant expectations in the electric vehicle (EV) and energy storage system (ESS) sectors. Key benefits such as enhanced safety, higher energy density, and extended lifespan are the primary drivers for their research and development. Trends in patent activity serve as crucial indicators of technological maturity and the competitive landscape of the market. The peak in 2022 and subsequent decline in filings could suggest that solid-state batteries are transitioning from the 'discovery' phase to the 'optimization' and 'mass production' phases. It also implies that major corporations and research institutions may have already established robust patent portfolios in core technological areas, thereby raising barriers to entry for new players.

Strategic Significance & Outlook

The declining trend in patent applications can be interpreted as an indication that solid-state battery technology is converging towards specific promising directions. Moving forward, market competition will shift from merely the quantity of patents to their quality, the capability for practical technology implementation, and cost competitiveness. Patent activity concentrated in cell chemistry is expected to continue, with breakthroughs in electrode-electrolyte interface technology, manufacturing processes, and material scalability being key determinants for the future commercialization of solid-state batteries. This report provides valuable insights for researchers, engineers, and investors to identify technological 'gaps' and future investment opportunities within the solid-state battery domain.

Source: https://www.patsnap.com/resources/blog/rd-blog/solid-state-batteries-patent-landscape-patent-landscape/

Collected: August 28, 2026 | Automated Research System (Gemini API)

#24 Honda Inaugurates Solid-State Battery Cell Production Demo Line in Sakura R&D Facility, Targeting 2026 Launch

Published August 20, 2026 How-To Geek Japan

OVERVIEW

Honda has launched a demonstration production line for solid-state battery cells at its Sakura R&D facility, aiming for mass production to commence in 2026. This strategic move marks a critical step towards commercializing next-generation battery technology capable of significantly improving electric vehicle performance. The initiative positions Honda as a key player in the global race to bring safer, higher energy density, and faster-charging batteries to the automotive market, addressing critical barriers to widespread EV adoption.

IN DEPTH

Key Findings

Honda has announced the establishment of a demonstration production line for all-solid-state battery cells at its R&D facility in Sakura City, Japan, with a strategic goal to commence production in 2026. This significant advancement represents a concrete milestone in the commercialization of next-generation battery technology, poised to dramatically enhance the performance metrics of electric vehicles (EVs).

Technical & Clinical Details

The newly established demonstration line is designed to refine the mass production techniques for solid-state batteries, which are anticipated to resolve persistent challenges in safety, energy density, and charging speed that plague current lithium-ion battery technology. By replacing liquid electrolytes with solid counterparts, solid-state batteries inherently mitigate the risk of thermal runaway and fire, while enabling significantly higher energy storage densities. This innovation promises to extend EV driving ranges substantially and drastically reduce charging times, making EVs a far more practical and appealing option for the average consumer. Honda's dedicated R&D teams are focused on optimizing the production process and achieving cost reductions to facilitate the widespread adoption of this transformative technology in the automotive market.

Background & Context

The global race to develop and commercialize solid-state batteries has intensified, with major automotive players such as Volkswagen and Renault investing heavily in this critical sector. Driven by stringent environmental regulations and escalating consumer demand for advanced EVs, manufacturers are pushing to establish next-generation battery technologies as quickly as possible. Honda's operational demonstration line is a pivotal step in this competitive landscape, laying the groundwork for the company to solidify its leadership in solid-state battery technology. Successful commercialization of this innovation is expected to reshape the EV market dynamics and exert a profound impact across the entire automotive industry.

Strategic Significance & Outlook

As Honda targets its 2026 production launch, efforts will concentrate on overcoming remaining technical hurdles and fortifying its supply chain. The introduction of these solid-state batteries is projected to redefine EV performance benchmarks, potentially serving as a catalyst for broader consumer adoption of electric vehicles in daily life. In the long term, solid-state battery technology holds vast potential beyond automotive applications, including renewable energy storage systems and portable electronics. Honda's proactive engagement in this domain underscores its commitment to fostering a sustainable mobility future and driving technological innovation forward.

Source: https://www.howtogeek.com/inside-hondas-solid-state-battery-breakthrough/

Collected: August 28, 2026 | Automated Research System (Gemini API)