

TROY TECHNICAL

ALL-SOLID-STATE BATTERIES

WEEKLY REPORT

October 17 - October 23, 2026 | Issue 2026-W42

**Interface stability, manufacturability, safety and
automotive qualification**

10

ANALYZED ARTICLES

10

PRIORITY THEMES

Issued 2026-10-23 | English edition | fixed approved cover artwork



All-Solid-State Batteries: the boundary moved from isolated claims to qualification evidence

10 English articles were reviewed independently from the Japanese edition. Ten themes are retained for management decisions.

SIGNAL 01 | ELECTROLYTE

Greater Bay Technology: GWh-scale all-solid-state battery specs

Greater Bay Technology has commissioned the industry's first gigawatt-hour-scale all-solid-state battery production line at its Nansha headquarters.

SIGNAL 02 | ELECTRODE INTERFACE

Dongfeng Motor: Solid-State Battery Roadmap and 2027 Timeline

Dongfeng Motor plans to scale the application of its self-developed fast-charging hybrid solid-liquid batteries by 2027.

SIGNAL 03 | CELL PROCESS

Solid-State Batteries: EVE Energy and Chery 2027 Roadmaps

EVE Energy and Chery have released engineering milestones for all-solid-state batteries, targeting medical implants and automotive applications respectively.

SIGNAL 04 | VALIDATION

Saft Solid-State Batteries: Bordeaux Production and Specs

Saft, a TotalEnergies subsidiary, has inaugurated production lines in Bordeaux for solid-state batteries utilizing sulphide and polymer electrolytes at room temperature.

DECISION

Focus this week's management attention on interface stability, manufacturability, safety and automotive qualification. Move only when the linked evidence can be reproduced under your own operating conditions.

THREE MANAGEMENT MOVES

1. Buyers: compare cell evidence under practical loading, pressure, temperature and cycle conditions.
2. Suppliers: show powder, interface and process consistency together with scale and cost.
3. Executives: track loading, pressure, interface resistance, yield, safety, capacity and timing.

EVIDENCE DISCIPLINE

FACT states what the collected English source reports. BUSINESS READ and ACTION are editorial interpretations. UNKNOWN lists information that the source file does not establish. A linked article is not treated as independent confirmation of every claim.

Five numbers or evidence anchors that require conditions

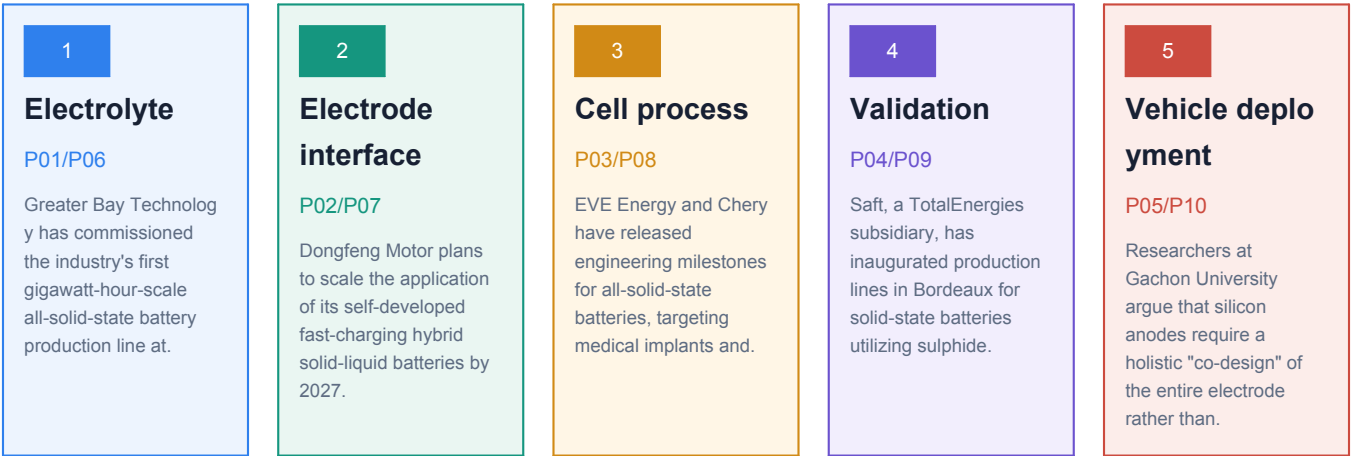
400W A09	SOURCE-BOUND CONDITION The company is also developing 400Wh/kg all-solid-state batteries and targets the delivery of 50,000 vehicles equipped with self-developed solid-state batteries in 2027.
045 W A03	SOURCE-BOUND CONDITION EVE Energy achieved a volumetric energy density of 1,045 Wh/L for brain-computer interfaces, while Chery plans to begin trial production of its "Kunpeng S" line in 2027.
10 millio n A06	SOURCE-BOUND CONDITION Toyota plans to expand its Arene software platform to 50 vehicle models and 10 million units by approximately 2030, extending the platform to partner companies by 2035.
79% A07	SOURCE-BOUND CONDITION The material achieved a lithium transference number of 79% and operated for nearly 300 hours in a symmetric lithium-metal cell without short-circuiting.
600km A05	SOURCE-BOUND CONDITION The vehicle achieves a maximum output of 500PS and a 600km range, demonstrating a shift toward high-density energy storage and 1000V electrical architectures.

HOW TO USE THESE NUMBERS

Each value is shown with the condition stated in the collected English article. Do not compare values across different test methods, device sizes, operating temperatures or commercial stages without normalizing those conditions.

Where the value chain moved

Each stage combines one leading theme and one supporting theme. The report treats handoffs as evidence transfers, not decorative arrows.



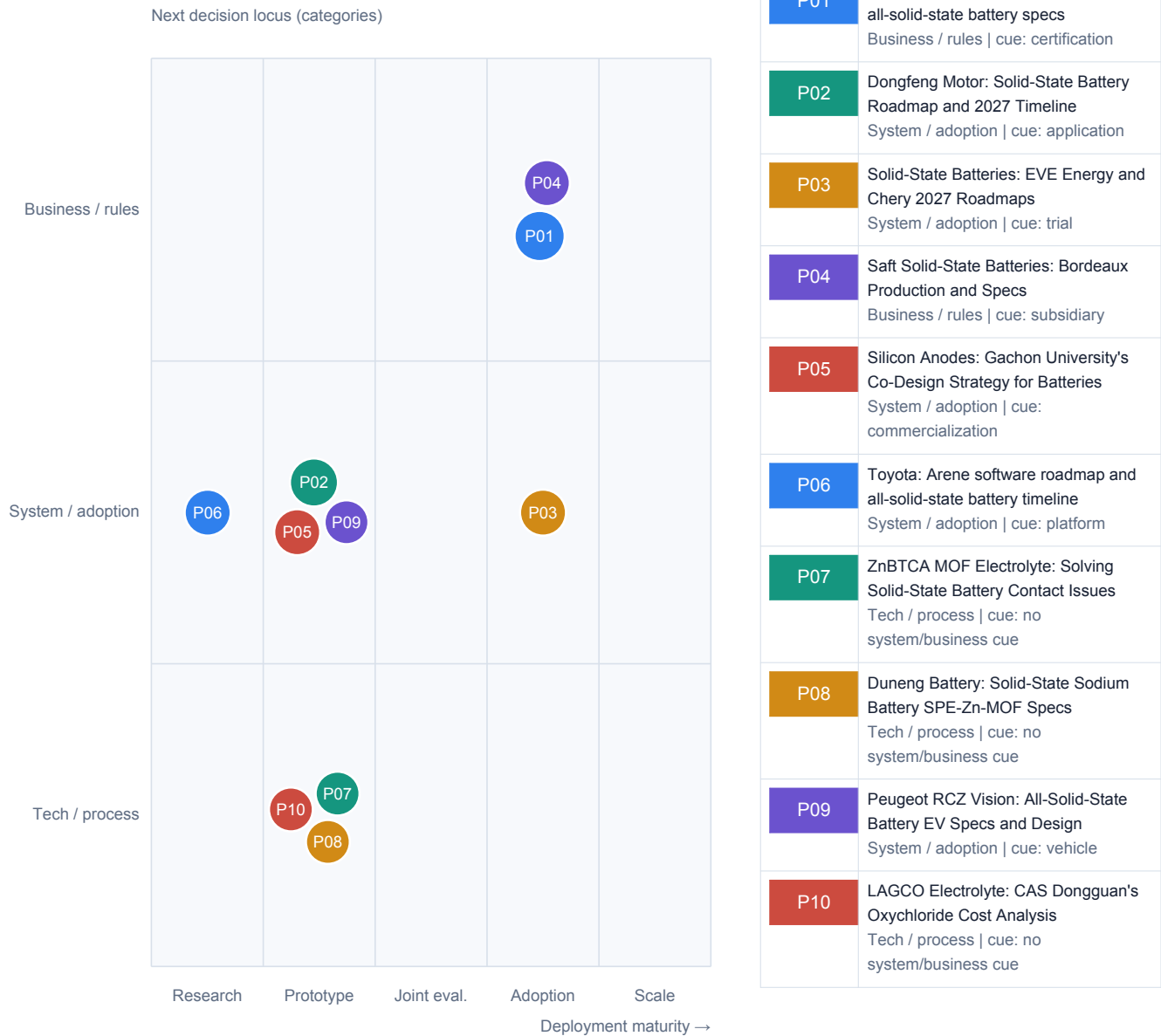
EVIDENCE REQUIRED AT EACH HANDOFF

Electrolyte to Electrode interface	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck loading, pressure, interface resistance, yield, safety, capacity and timing.
Electrode interface to Cell process	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck loading, pressure, interface resistance, yield, safety, capacity and timing.
Cell process to Validation	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck loading, pressure, interface resistance, yield, safety, capacity and timing.
Validation to Vehicle deployment	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck loading, pressure, interface resistance, yield, safety, capacity and timing.

COMMON CONTROL POINT

No theme moves to a commercial commitment until a named owner has reproduced the relevant evidence and documented loading, pressure, interface resistance, yield, safety, capacity and timing.

Priority map: maturity and next decision locus



REPRODUCIBLE POSITIONING RULE

Horizontal position uses five discrete stages: Research, Prototype, Joint evaluation, Product adoption and Scale. The vertical bands classify the next decision locus: Tech / process, System / adoption, or Business / rules (including supply systems). Article-title cues take precedence; the overview is used only when the title is silent. These are categories, not impact ranks. Bubble diameter reflects the editorial score.

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P01

Greater Bay Technology: GWh-scale all-solid-state battery specs

A04 | Electrolyte | Product adoption

Date not stated

FACT

Greater Bay Technology has commissioned the industry's first gigawatt-hour-scale all-solid-state battery production line at its Nansha headquarters. The cells are the first to be mass-produced with third-party certification meeting the GB/T 48093.1-2026 national standard. This development enables a flexible manufacturing transition from liquid to solid-state batteries for EVs, robotics, and the low-altitude economy.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P01.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 22/25 | MATURITY 4/5 | DECISION LOCUS: BUSINESS / RULES

P02

Dongfeng Motor: Solid-State Battery Roadmap and 2027 Timeline

A09 | Electrode interface | Pilot

Date not stated

FACT

Dongfeng Motor plans to scale the application of its self-developed fast-charging hybrid solid-liquid batteries by 2027. The company is also developing 400Wh/kg all-solid-state batteries and targets the delivery of 50,000 vehicles equipped with self-developed solid-state batteries in 2027.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P02.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 21/25 | MATURITY 2/5 | DECISION LOCUS: SYSTEM / ADOPTION

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P03

Solid-State Batteries: EVE Energy and Chery 2027 Roadmaps

A03 | Cell process | Product adoption

Date not stated

FACT

EVE Energy and Chery have released engineering milestones for all-solid-state batteries, targeting medical implants and automotive applications respectively. EVE Energy achieved a volumetric energy density of 1,045 Wh/L for brain-computer interfaces, while Chery plans to begin trial production of its "Kunpeng S" line in 2027.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P03.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | DECISION LOCUS: SYSTEM / ADOPTION

P04

Saft Solid-State Batteries: Bordeaux Production and Specs

A01 | Validation | Product adoption

Date not stated

FACT

Saft, a TotalEnergies subsidiary, has inaugurated production lines in Bordeaux for solid-state batteries utilizing sulphide and polymer electrolytes at room temperature. These batteries offer up to 50 per cent higher energy density than conventional lithium-ion cells and are primarily targeted at aerospace applications.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P04.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | DECISION LOCUS: BUSINESS / RULES

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P05

Silicon Anodes: Gachon University's Co-Design Strategy for Batteries

A08 | Vehicle deployment | Pilot

Date not stated

FACT

Researchers at Gachon University argue that silicon anodes require a holistic "co-design" of the entire electrode rather than just material optimization to overcome commercialization barriers. This integrated framework addresses the 300 percent volume expansion of silicon to enable high-energy-density batteries.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P05.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 20/25 | MATURITY 2/5 | DECISION LOCUS: SYSTEM / ADOPTION

P06

Toyota: Arene software roadmap and all-solid-state battery timeline

A06 | Electrolyte | Research

Date not stated

FACT

Toyota plans to expand its Arene software platform to 50 vehicle models and 10 million units by approximately 2030, extending the platform to partner companies by 2035. The company also targets the practical application of all-solid-state batteries by 2027-2028 for high-output EVs, eVTOLs, and large commercial vehicles.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P06.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 20/25 | MATURITY 1/5 | DECISION LOCUS: SYSTEM / ADOPTION

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P07

ZnBTCA MOF Electrolyte: Solving Solid-State Battery Contact Issues

A07 | Electrode interface | Pilot

Date not stated

FACT

Researchers at Rice University developed ZnBTCA, a metal-organic framework (MOF) using flexible aliphatic linkers to maintain physical contact with electrodes during battery cycling. The material achieved a lithium transference number of 79% and operated for nearly 300 hours in a symmetric lithium-metal cell without short-circuiting. This approach addresses the interfacial resistance bottleneck that often leads to dendrite formation and cell failure.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P07.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | DECISION LOCUS: TECH / PROCESS

P08

Duneng Battery: Solid-State Sodium Battery SPE-Zn-MOF Specs

A10 | Cell process | Pilot

Date not stated

FACT

Duneng Battery Technology (Jiaxing) Co., Ltd. has developed a composite solid polymer electrolyte (SPE) using Zn-MOF-74 to overcome ion conductivity and stability barriers in solid-state sodium batteries. The research, published in *Advanced Materials*, achieves a room-temperature ionic conductivity of 1.02×10⁻³ S cm⁻¹ and a wide electrochemical window of 5.1 V.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P08.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | DECISION LOCUS: TECH / PROCESS

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P09

Peugeot RCZ Vision: All-Solid-State Battery EV Specs and Design

A05 | Validation | Pilot

Date not stated

FACT

Peugeot has introduced the RCZ Vision, a full-electric sports concept featuring an all-solid-state battery developed with Factorial Energy. The vehicle achieves a maximum output of 500PS and a 600km range, demonstrating a shift toward high-density energy storage and 1000V electrical architectures.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P09.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | DECISION LOCUS: SYSTEM / ADOPTION

P10

LAGCO Electrolyte: CAS Dongguan's Oxychloride Cost Analysis

A02 | Vehicle deployment | Pilot

Date not stated

FACT

The Dongguan Institute of Materials, Chinese Academy of Sciences, has developed a new oxychloride solid electrolyte designated as LAGCO. The estimated raw material cost for this electrolyte is approximately \$40.8/kg.

WHY IT MATTERS

The decision relevance is interface stability, manufacturability, safety and automotive qualification. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, show powder, interface and process consistency together with scale and cost.

ACTION

Within 30 days, compare cell evidence under practical loading, pressure, temperature and cycle conditions; record the evidence and owner against P10.

UNKNOWN

Still unproven or incompletely stated: loading, pressure, interface resistance, yield, safety, capacity and timing.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | DECISION LOCUS: TECH / PROCESS

Playbook and 0-5 year roadmap

STAKEHOLDER	NOW 0-30 DAYS	NEXT 1-12 MONTHS	LATER 1-5 YEARS
Operating companies	compare cell evidence under practical loading, pressure, temperature and cycle conditions	Run production-like qualification with explicit acceptance and stop criteria.	Build a portfolio and architecture that can absorb technology and supplier changes.
Materials, equipment and technology suppliers	show powder, interface and process consistency together with scale and cost	Create shared reliability, process-window and failure-analysis data with customers.	Standardize interfaces, traceability, lifecycle support and recovery services.
Trading, investment and legal teams	Map loading, pressure, interface resistance, yield, safety, capacity and timing.	Contract for capacity, quality, change notice, liability, alternatives and exit.	Diversify regional, technical and customer concentration risk.

ROADMAP

NOW 0-30 DAYS Evidence ledger Owner: Strategy + quality Deliverable: claim, source, condition, owner	NOW 0-30 DAYS Risk screen Owner: Procurement + legal Deliverable: unknowns, alternatives, stop	NEXT 1-12 MONTHS Joint qualification Owner: R&D + supplier Deliverable: process window and failure data
NEXT 1-12 MONTHS Commercial gate Owner: Business + finance Deliverable: unit economics and capacity	LATER 1-5 YEARS Platform strategy Owner: Executive team Deliverable: portfolio and interface roadmap	LATER 1-5 YEARS Service layer Owner: Operations + channel Deliverable: monitoring, maintenance and recovery

GO / NO-GO GATES

GATE	OWNER	REQUIRED EVIDENCE	NO-GO CONDITION
G1 Evidence	Quality	Source, test conditions and reproducibility	No traceable evidence
G2 Integration	R&D	Interface, process window and failure analysis	Cannot meet system conditions
G3 Commercial	Business	Capacity, total cost, contract and alternatives	Economics or supply cannot be supported
G4 Lifecycle	Operations	Monitoring, maintenance, change notice and exit	No accountable operating plan

ANALYZED ARTICLES | ITEMS 01-10

Every title and URL is displayed in full. URLs wrap without shortening and remain clickable. A verified-reference label means the translated HTML did not retain its original source URL.

ID	FULL ARTICLE TITLE	FULL SOURCE / VERIFIED REFERENCE URL - CLICKABLE
A01	Saft Solid-State Batteries: Bordeaux Production and Specs	https://electrive.com/2026/10/19/totalenergies-subsiidiary-saft-manufactures-solid-state-batteries-in-bordeaux
A02	LAGCO Electrolyte: CAS Dongguan's Oxychloride Cost Analysis	https://news.metal.com/en/newscontent/104166409-solid-state-battery-dong-guan-institute-of-materials-chinese-academy-of-sciences-develops-oxychloride-solid-electrolyte-lagco-with-raw-material-cost-estimated-at-about-408kg
A03	Solid-State Batteries: EVE Energy and Chery 2027 Roadmaps	https://news.metal.com/en/newscontent/104173879-solid-state-batteries-under-the-2027-consensus-eve-energy-and-chery-two-representative-players-unveil-products
A04	Greater Bay Technology: GWh-scale all-solid-state battery specs	https://autonews.gasgoo.com/articles/news/greater-bay-technology-commissions-gwh-scale-all-solid-state-battery-production-line-2110549317063766016
A05	Peugeot RCZ Vision: All-Solid-State Battery EV Specs and Design	https://motor-fan.jp/article/1652888/
A06	Toyota: Arene software roadmap and all-solid-state battery timeline	https://newswitch.jp/p/50559
A07	ZnBTCA MOF Electrolyte: Solving Solid-State Battery Contact Issues	https://www.intelligentliving.co/softer-solid-electrolyte-contact/
A08	Silicon Anodes: Gachon University's Co-Design Strategy for Batteries	https://bioengineer.org/silicon-anodes-need-full-electrode-co-design-not-just-better-materials-to-power-next-gen-batteries/
A09	Dongfeng Motor: Solid-State Battery Roadmap and 2027 Timeline	https://news.qq.com/rain/a/20261021A0E4KM00
A10	Duneng Battery: Solid-State Sodium Battery SPE-Zn-MOF Specs	https://www.sohu.com/a/1089724723_100102218

SolidStateBattery — Selected Articles

Date: 2026-10-25

Articles: 10

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- #10 Duneng Battery: Solid-State Sodium Battery SPE-Zn-MOF Specs

#01 Saft Solid-State Batteries: Bordeaux Production and Specs

Published October 19, 2026 electrive.com Germany



OVERVIEW

Saft, a TotalEnergies subsidiary, has inaugurated production lines in Bordeaux for solid-state batteries utilizing sulphide and polymer electrolytes at room temperature. These batteries offer up to 50 per cent higher energy density than conventional lithium-ion cells and are primarily targeted at aerospace applications.

Key Findings

Saft has launched new production lines at its Bordeaux facility to manufacture self-developed solid-state batteries. The company is the first French manufacturer to produce these batteries using both sulphide and polymer electrolytes at room temperature. While Saft has not mentioned potential use in road vehicles, the primary target market is the aerospace sector, where gains in performance, safety, and energy density are highly valued.

Technical Details

The Bordeaux facility is designed to accommodate two specific technologies: polymer-based semi-solid-state batteries and sulphide-based solid-state batteries. Technical specifications provided by Saft include:

- **Energy Density:** Up to 50 per cent higher than conventional lithium-ion batteries.
- **Manufacturing Process:** Implementation of a dry electrode method, which is expected to reduce CO₂ emissions during production by up to 40 per cent.
- **Operating Conditions:** Facilities operate explicitly at room temperature.

Saft has previously delivered semi-solid-state cells in collaboration with partner Safran for aviation use.

Background & Context

Saft is a shareholder in the Automotive Cells Company (ACC) joint venture alongside Stellantis and Mercedes-Benz. While ACC originally planned plants in Germany and Italy, the venture is currently focusing solely on the ramp-up phase of its single cell factory in France. Additionally, Saft is involved in several research initiatives, including the SUBLIME project focusing on sulphide-based solid-state batteries and the TALISSMAN project developing lithium-sulphur batteries for electric vehicles. It is also collaborating with Stellantis on batteries with integrated charging and inverter functions.

Significance & Outlook

CEO Cédric Duclos stated that these production lines transition years of research into industrial capacity, aiming to position France and Europe as leaders in strategic battery technology. This development occurs while another French producer, Blue Solutions (part of the Bolloré conglomerate), is restructuring its lithium-metal-polymer (LMP) technology following issues in serial applications, specifically in buses.

Source: <https://electrive.com/2026/10/19/totalenergies-subsiidiary-saft-manufactures-solid-state-batteries-in-bordeaux>

Collected: October 24, 2026 | Automated Research System (AI)

#02 LAGCO Electrolyte: CAS Dongguan's Oxychloride Cost Analysis

Published October 19, 2026 Shanghai Metals Market (SMM) China



OVERVIEW

The Dongguan Institute of Materials, Chinese Academy of Sciences, has developed a new oxychloride solid electrolyte designated as LAGCO. The estimated raw material cost for this electrolyte is approximately \$40.8/kg.

Key Findings

The Dongguan Institute of Materials, Chinese Academy of Sciences, has developed LAGCO, a solid electrolyte based on oxychloride chemistry for use in solid-state batteries. A primary highlight of this development is the estimated raw material cost, which is calculated at approximately \$40.8/kg.

Technical Details

The material developed is an oxychloride solid electrolyte identified as LAGCO. While the source focuses on the economic aspect of the raw materials, the specific chemical composition and structural properties of the LAGCO electrolyte are attributed to the research conducted by the Dongguan Institute of Materials.

Background & Context

This development comes from the Chinese Academy of Sciences' Dongguan Institute of Materials. The data regarding the cost and development of the LAGCO electrolyte was reported by Shanghai Metals Market (SMM). SMM notes that their data is processed based on publicly available information, market communication, and internal database models, serving as a reference rather than a decision-making recommendation.

Significance & Outlook

The identification of a specific raw material cost of \$40.8/kg provides a quantitative benchmark for the economic viability of oxychloride-based solid electrolytes. By establishing a cost estimate for the LAGCO material, the research offers a data point for evaluating the scalability of this specific solid-state battery component compared to other electrolyte chemistries.

Source: <https://news.metal.com/en/newscontent/104166409-solid-state-battery-dongguan-institute-of-materials-chinese-academy-of-sciences-develops-oxychloride-solid-electrolyte-lagco-with-raw-material-cost-estimated-at-about-408kg>

#03 Solid-State Batteries: EVE Energy and Chery 2027 Roadmaps

Published October 22, 2026 Shanghai Metals Market (SMM) China



OVERVIEW

EVE Energy and Chery have released engineering milestones for all-solid-state batteries, targeting medical implants and automotive applications respectively. EVE Energy achieved a volumetric energy density of 1,045 Wh/L for brain-computer interfaces, while Chery plans to begin trial production of its "Kunpeng S" line in 2027.

Key Findings

On October 20, 2026, EVE Energy and Chery Automobile disclosed distinct engineering milestones for all-solid-state batteries. EVE Energy released the "Longquan No. 3 2.0" battery for implantable brain-computer interfaces, while Chery unveiled a roadmap for its "Kunpeng S" trial production line and debuted the "Rhino" all-solid-state battery pack.

Technical Details

The "Longquan No. 3 2.0" utilizes an anode-free route in a titanium-cased coin cell (23 mm diameter, 4 mm thickness), achieving a volumetric energy density of 1,045 Wh/L. This design eliminates the conventional anode buffer layer, allowing lithium ions to deposit directly on the current collector. However, this approach increases risks regarding lithium dendrite formation and "dead lithium" accumulation, which can lead to rapid cycle life decay.

Chery's progress is divided into system integration and manufacturing:

- **Rhino PACK:** Rolled off the line on October 19, integrating cells with thermal management and BMS.
- **Kunpeng S:** A trial production line scheduled to begin production in 2027.

Background & Context

EVE Energy is pursuing a dual-track strategy. While the "Longquan No. 3 2.0" targets niche medical markets with high cost tolerance and strict safety requirements, the company also produced the "Longquan No. 4" 60 Ah traction battery in March, which cycles under pressure ≤ 5 MPa. EVE's roadmap targets an all-solid-state battery 1.0 (350 Wh/kg, 800 Wh/L) in 2026 and a 2.0 product exceeding 1,000 Wh/L by 2028.

Significance & Outlook

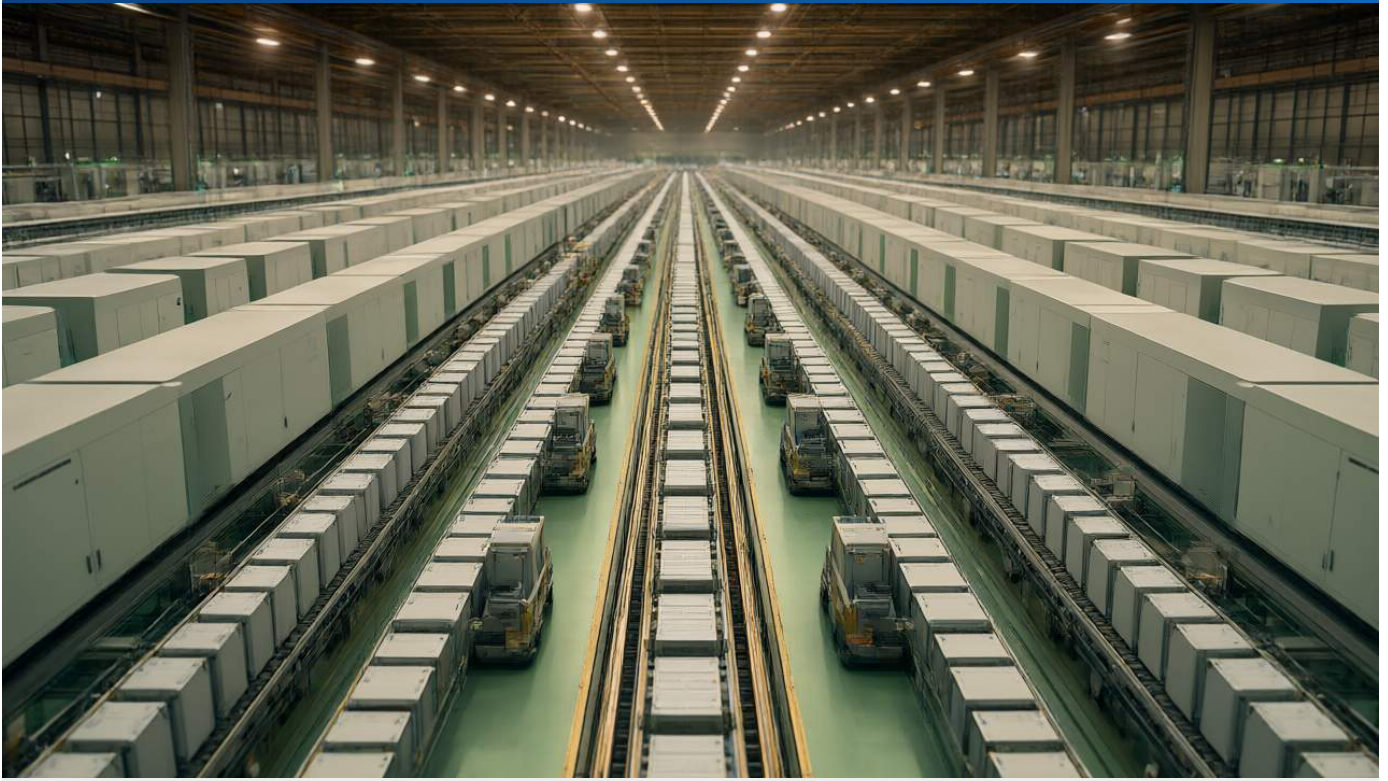
The divergence in strategies reflects different validation paths. EVE Energy is using the implantable medical segment to refine the "anode-free + solid electrolyte" scheme before scaling to automotive products. Chery is focusing on manufacturing readiness; the company plans to install hybrid solid-liquid batteries in vehicles in Q4 2026, followed by on-vehicle validation of all-solid-state batteries in 2027.

Source: <https://news.metal.com/en/newscontent/104173879-solid-state-batteries-under-the-2027-consensus-eve-energy-and-chery-two-representative-players-unveil-products>

Collected: October 24, 2026 | Automated Research System (AI)

#04 Greater Bay Technology: GWh-scale all-solid-state battery specs

Published October 15, 2026 Gasgoo China



OVERVIEW

Greater Bay Technology has commissioned the industry's first gigawatt-hour-scale all-solid-state battery production line at its Nansha headquarters. The cells are the first to be mass-produced with third-party certification meeting the GB/T 48093.1-2026 national standard. This development enables a flexible manufacturing transition from liquid to solid-state batteries for EVs, robotics, and the low-altitude economy.

Key Findings

Greater Bay Technology has completed capacity upgrades for the mass production of all-solid-state batteries. The company is the first to clear testing under the national standard GB/T 48093.1-2026, which was issued in late August. Third-party laboratory tests confirmed that the cells lost less than 0.5% of their mass after being punctured and baked for six hours in a 120°C vacuum.

Technical Details

The batteries utilize a deep-eutectic-based composite solid electrolyte. Key performance specifications include:

- **Specific Energy:** Ranges from 260 to 480 Wh/kg.
- **Cycle Life:** Matches conventional cells.
- **Charging:** Supports stable fast charging.
- **Safety:** Passed all tests under the GB 38031-2025 standard (effective July 1, 2026), including a nail-penetration test where a steel needle pierced a fully charged cell without causing fire, explosion, or structural failure.

Background and Context

The production line was created by retrofitting and optimizing portions of an existing 4 GWh liquid lithium battery line. This approach allowed the company to bridge the gap to all-solid-state manufacturing without building a new heavy-asset plant, while maintaining the ability to switch flexibly between liquid and solid-state formats. Following the production of A-sample cells in April, the GWh-scale line was commissioned six months later on October 13.

Significance and Outlook

To accelerate deployment, Greater Bay Technology has signed strategic pacts with Hubei Liming Lithium Industry and the Shenzhen Vertical Take-Off and Landing Aircraft Innovation Center. The company intends to deploy these batteries across several sectors, including:

- Electric vehicles.

- The low-altitude economy.
- Embodied robots.
- Premium energy storage.

Source: <https://autonews.gasgoo.com/articles/news/greater-bay-technology-commissions-gwh-scale-all-solid-state-battery-production-line-2110549317063766016>

Collected: October 24, 2026 | Automated Research System (AI)

#05 Peugeot RCZ Vision: All-Solid-State Battery EV Specs and Design

Published October 19, 2026 MOTOR-FAN Japan



OVERVIEW

Peugeot has introduced the RCZ Vision, a full-electric sports concept featuring an all-solid-state battery developed with Factorial Energy. The vehicle achieves a maximum output of 500PS and a 600km range, demonstrating a shift toward high-density energy storage and 1000V electrical architectures.

Key Findings

The Peugeot RCZ Vision is a design concept that integrates a 1000V electrical architecture with all-solid-state battery technology. Developed in collaboration with Factorial Energy, the powertrain delivers a maximum output of 500PS and a maximum cruising range of 600km, with a power consumption rate of 11.5kWh/100km. A critical performance benchmark is the charging speed, which allows the battery to increase from 10% to 80% in 10 minutes.

Technical Details

The vehicle is built on the STLA One modular platform, which supports "X-by-Wire" steer-by-wire systems. The adoption of all-solid-state cells allows for higher energy density, reducing battery volume while extending range. The interior features the "i-Cockpit" with a transparent micro-LED display and a new "Hypersquare" steering system. To minimize driver distraction, the transparent display allows information to be projected directly in the line of sight while remaining nearly invisible when off.

- **Platform:** STLA One (Modular)
- **Battery Type:** All-solid-state (Factorial Energy)
- **Electrical System:** 1000V architecture
- **Performance:** 500PS / 600km range
- **Charging:** 10% to 80% in 10 minutes

Background and Context

The RCZ Vision serves as a futuristic successor to the original RCZ coupe sold between 2009 and 2015. It adopts the "Feline Future" design code, characterized by a "bubble roof" and an expanded glass surface extending from the bonnet to the rear of the vehicle. The interior utilizes a mix of Alcantara and recycled "Perinova" leather, featuring a four-seat configuration with an asymmetrical seat structure to enhance lateral support.

Significance and Outlook

While not intended for immediate production, the RCZ Vision acts as a technical preview for future Peugeot flagship models. The integration of the STLA One platform and all-solid-state batteries indicates a roadmap toward reduced development cycles and increased hardware scalability for next-generation electric vehicles.

Source: <https://motor-fan.jp/article/1652888/>

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#06 Toyota: Arene software roadmap and all-solid-state battery timeline

Published October 19, 2026 newswitch (日刊工業新聞) Japan



OVERVIEW

Toyota plans to expand its Arene software platform to 50 vehicle models and 10 million units by approximately 2030, extending the platform to partner companies by 2035. The company also targets the practical application of all-solid-state batteries by 2027–2028 for high-output EVs, eVTOLs, and large commercial vehicles.

Key Findings

Toyota is scaling its "Arene" software platform to cover 50 vehicle models and approximately 10 million units by 2030. By 2035, the company intends to deploy this platform beyond its own fleet to include vehicles from partner companies.

Simultaneously, Toyota is targeting 2027–2028 for the practical application of all-solid-state batteries, focusing on high-output electric vehicles (EVs), electric vertical take-off and landing (eVTOL) aircraft, and large commercial vehicles.

Technical Details: Arene Platform

Arene serves as a software foundation comprising a vehicle OS, data collection infrastructure, and development/evaluation tools. In the RAV4, the platform has already reduced the evaluation period for advanced driver assistance systems (ADAS) by 70%. Toyota will sequentially deploy Arene across all models, including the Lexus ES sedan. Beyond automotive use, Arene will function as a data foundation for AI robots and housing, evolving into an "integrated AI platform" that enables data linkage across different industries.

Technical Details: Battery Technology

Toyota has addressed the challenges of all-solid-state batteries—which use solid electrolytes instead of liquids—by utilizing unique material development and structural design to suppress expansion and contraction during charging and discharging. This technology aims to achieve higher energy density per volume, resulting in smaller footprints, shorter charging times, extended cruising ranges, and higher output.

Additionally, Toyota is developing a high-performance version of the prismatic liquid lithium-ion battery (LiB). By optimizing wiring, the company reduced cell height by 20% and improved installation efficiency by 20% compared to current products. This allows for lower vehicle floors and innovative designs by challenging the convention that EVs must have high vehicle heights.

Significance and Outlook

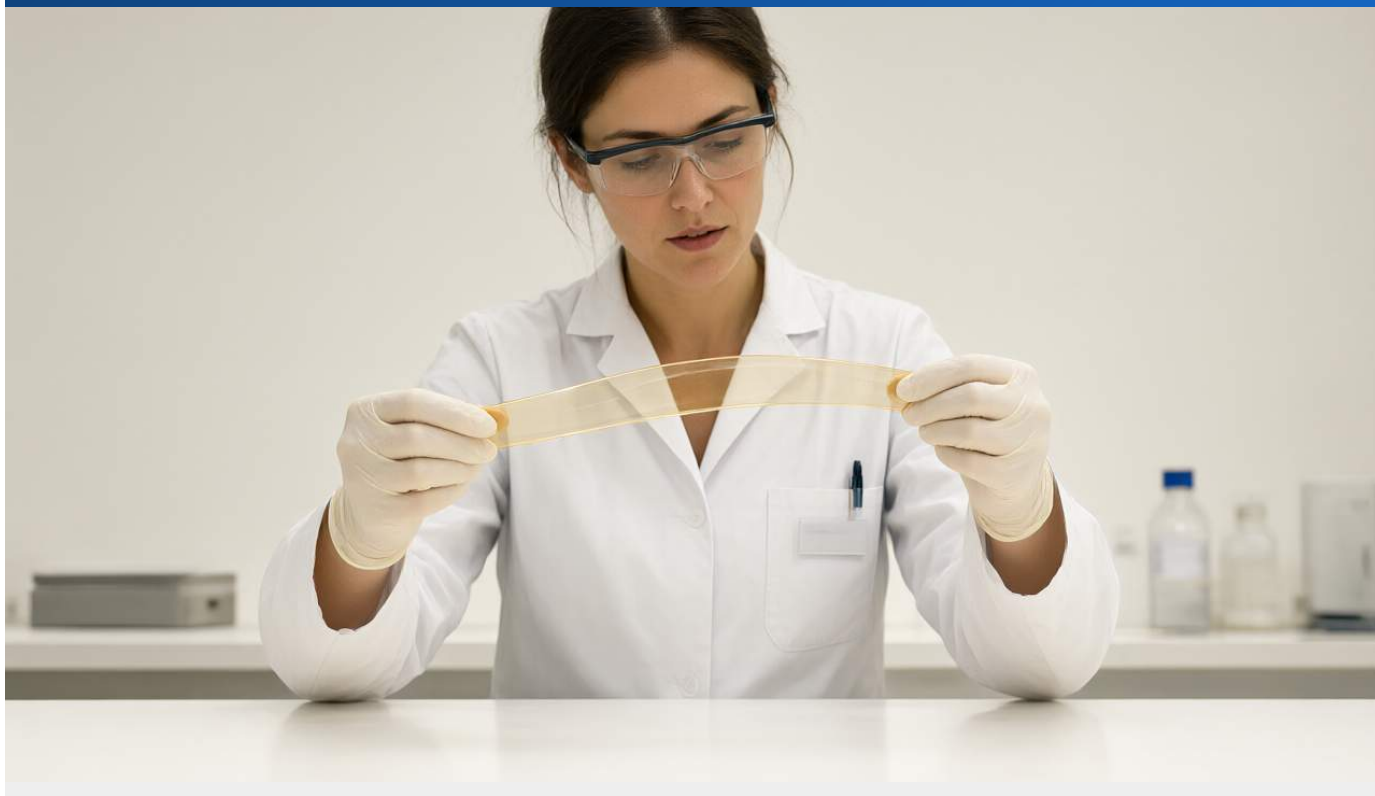
Through the integration of the Arene platform and next-generation battery chemistry, Toyota aims to enhance its competitiveness in electrification and intelligence. The transition to a cross-industry data platform and the deployment of high-density batteries represent a strategic shift toward software-defined vehicles and diversified electric mobility.

Source: <https://newswitch.jp/p/50559>

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#07 ZnBTCA MOF Electrolyte: Solving Solid-State Battery Contact Issues

Published October 17, 2026 Intelligent Living (Rice University の研究紹介) USA



OVERVIEW

Researchers at Rice University developed ZnBTCA, a metal-organic framework (MOF) using flexible aliphatic linkers to maintain physical contact with electrodes during battery cycling. The material achieved a lithium transference number of 79% and operated for nearly 300 hours in a symmetric lithium-metal cell without short-circuiting. This approach addresses the interfacial resistance bottleneck that often leads to dendrite formation and cell failure.

Key Findings

The Rice University team developed ZnBTCA, a soft solid electrolyte that maintains intimate contact with electrodes as they swell and shrink. In a symmetric lithium-metal cell, the material operated for nearly 300 hours without short-circuiting. The electrolyte demonstrated a lithium transference number of approximately 79%, meaning the majority of the ionic current was carried by lithium ions.

Technical Details

ZnBTCA is a metal-organic framework composed of zinc nodes and flexible aliphatic linkers. Unlike the rigid aromatic linkers common in MOF electrolytes, the aliphatic carbon-chain backbone allows the material to deform and adapt to the electrode surface. The framework carries a negative charge to facilitate the movement of positively charged lithium ions.

Performance metrics for ZnBTCA include:

- **Ionic Conductivity:** 3.53×10^{-5} S/cm at 20°C, increasing to 1.87×10^{-4} S/cm at 60°C.
- **Activation Energy:** 0.36 eV.
- **Composition:** Approximately 95% of mobile charge-balancing ions were lithium after exchanging sodium ions in the framework.

While these conductivity figures are competitive for all-solid MOFs, they remain roughly two orders of magnitude below leading sulfide electrolytes.

Background and Context

Conventional liquid electrolytes seep into electrode pores and re-wet surfaces during volume changes. Solid electrolytes, however, often suffer from incomplete physical contact, creating resistive bottlenecks. This resistance concentrates current and generates heat, encouraging uneven lithium deposition and the growth of dendrites. While manufacturers often use external pressure to compensate, this adds weight and cost without guaranteeing contact on rough surfaces.

Significance and Outlook

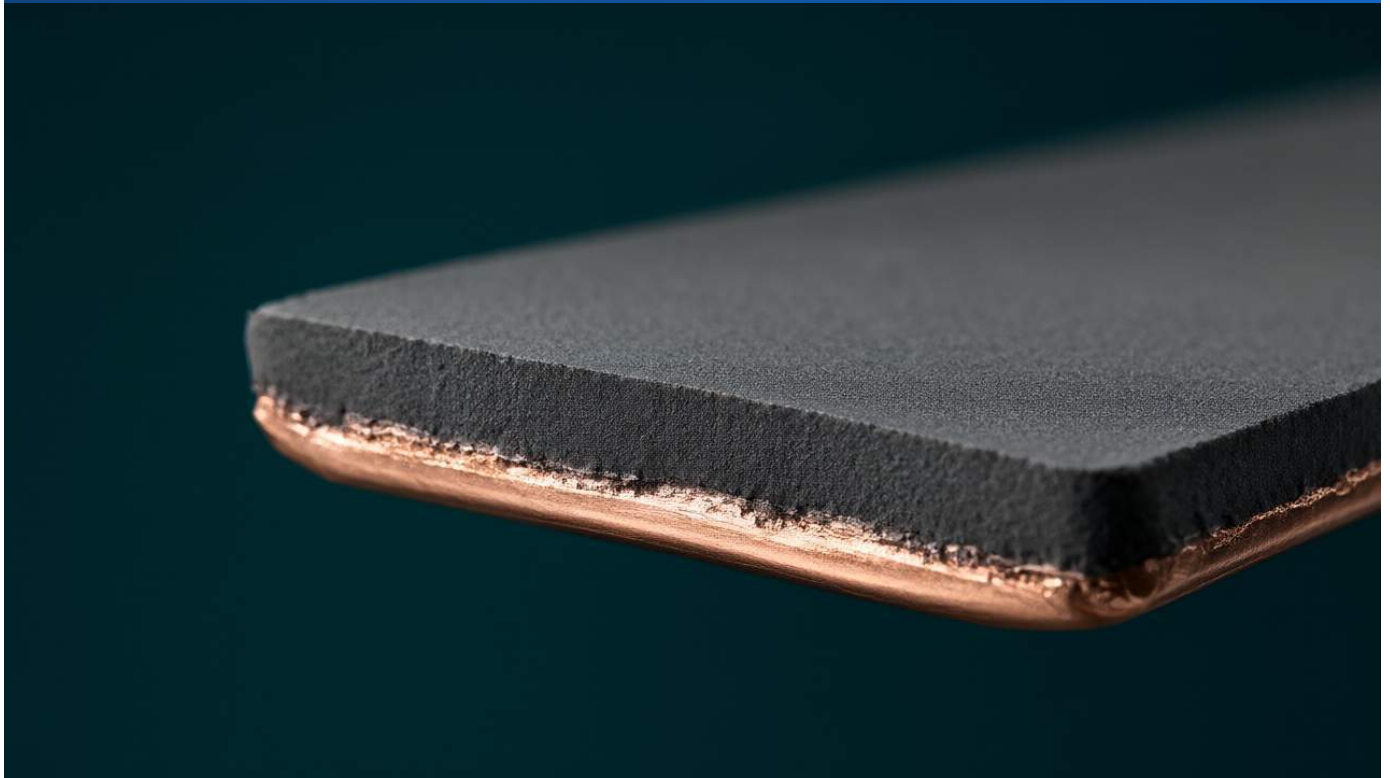
By utilizing abundant and inexpensive zinc and aliphatic linkers, ZnBTCA provides a scalable path toward reducing interfacial impedance. The research indicates that mechanical flexibility, rather than just chemical pore structure, is a critical design tool for solid-state batteries. Although the material is not yet ready for commercial purchase, it demonstrates that a softer electrolyte can mitigate the primary causes of short-circuiting in lithium-metal cells.

Source: <https://www.intelligentliving.co/softer-solid-electrolyte-contact/>

Collected: October 24, 2026 | Automated Research System (AI)

#08 Silicon Anodes: Gachon University's Co-Design Strategy for Batteries

Published October 17, 2026 Bioengineer.org (Frontiers in Batteries and Electrochemistry掲載、Gachon大学) South Korea



OVERVIEW

Researchers at Gachon University argue that silicon anodes require a holistic "co-design" of the entire electrode rather than just material optimization to overcome commercialization barriers. This integrated framework addresses the 300 percent volume expansion of silicon to enable high-energy-density batteries.

Key Findings

A research team at Gachon University proposes a co-design strategy that integrates silicon materials, electrode architecture, interfacial chemistry, and processing technology. The team asserts that optimizing active materials alone is insufficient; instead, every component—including binders and electrolyte additives—must be treated as an active design parameter to move silicon anodes from the laboratory to factory production.

Technical Details

The co-design approach addresses several critical engineering challenges:

- **Structural Stability:** To manage the 300 percent volume swelling of silicon, the Gachon team developed graphene nanoribbon-based conductive networks and 2D structured graphite frameworks to maintain inter-particle connectivity.
- **Active Components:** The team proposes multifunctional network binders with crosslinked frameworks to prevent electrode cracking. Additionally, polyanion-assisted ionic-electronic conductive agents are used to preserve electrical pathways and facilitate electrolyte penetration.
- **Processing and Chemistry:** Dry electrode processing is highlighted as a way to mitigate solvent-induced binder migration common in wet-based processing. To stabilize these matrices, chemical modifiers like carboxy silanes are used to ensure stable operation at high areal capacities of 3.5 milliampere-hours per square centimeter.

Background & Context

Silicon is a highly desirable anode material due to its theoretical capacity of over 3,600 milliampere-hours per gram, nearly ten times that of graphite, which stores 372 milliampere-hours per gram. However, silicon's mechanical "breathing" pulverizes particles and ruptures the solid electrolyte interphase, leading to rapid capacity decay. While nanostructuring and graphene coatings have shown laboratory success, many of these methods rely on low areal loadings below 1 milliampere-hour per square centimeter and flooded electrolyte conditions, creating a gap in industrial feasibility.

Significance & Outlook

By bridging material innovation with scalable electrode engineering, this co-design philosophy aims to resolve the discrepancy between lab performance and factory constraints. This integrated approach is particularly critical for all-solid-state batteries, where reinforced crosslinked binders can alleviate contact-loss issues at solid-solid interfaces.

Source: <https://bioengineer.org/silicon-anodes-need-full-electrode-co-design-not-just-better-materials-to-power-next-gen-batteries/>

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#09 Dongfeng Motor: Solid-State Battery Roadmap and 2027 Timeline

Published October 21, 2026 IT時代網（騰訊新聞掲載） China



OVERVIEW

Dongfeng Motor plans to scale the application of its self-developed fast-charging hybrid solid-liquid batteries by 2027. The company is also developing 400Wh/kg all-solid-state batteries and targets the delivery of 50,000 vehicles equipped with self-developed solid-state batteries in 2027.

Key Findings

Dongfeng Motor intends to achieve large-scale application of its next-generation fast-charging hybrid solid-liquid batteries by 2027. Additionally, the company has set a target to deliver 50,000 vehicles featuring self-developed solid-state batteries by 2027.

Technical Details

Dongfeng's energy storage strategy focuses on a multi-gradient product sequence ranging from 240Wh/kg to 500Wh/kg. Current technical milestones include:

- **All-Solid-State Development:** The company is conducting research, trial production, and vehicle integration testing for 400Wh/kg all-solid-state batteries.
- **Cold-Weather Performance:** In January 2026, a prototype vehicle equipped with a 350Wh/kg solid-state battery underwent cold-region calibration testing in Mohe. This battery supports a vehicle range exceeding 1,000 kilometers and maintains 72% energy retention at -30°C.
- **Hydrogen Power:** Dongfeng has established its first 400kW hydrogen fuel cell stack production line.
- **Intellectual Property:** The company has developed a full-process autonomous platform covering R&D, trial production, and pilot testing, resulting in over 10 key core technologies and more than 180 invention patents.

Background & Context

These developments were detailed by General Manager Feng Changjun during the 2026 World Intelligent Connected Vehicles Conference held in Beijing Yizhuang from October 21 to 23. Alongside battery technology, Dongfeng is developing a new generation of combined driving assistance systems based on a central concentrated SOA electronic electrical architecture. This system utilizes a single-stage end-to-end large model integrated with reinforcement learning to shift driving assistance from "seeing and reacting" to "understanding and predicting."

Significance & Outlook

The integration of these zero-carbon power bases—pure electric and hydrogen energy—alongside the new driving assistance systems will culminate in a series of new products scheduled for market release in 2027.

Source: <https://news.qq.com/rain/a/20261021A0E4KM00>

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#10 Duneng Battery: Solid-State Sodium Battery SPE-Zn-MOF Specs

Published October 19, 2026 搜狐（情報元：丽申药业） China



OVERVIEW

Duneng Battery Technology (Jiaxing) Co., Ltd. has developed a composite solid polymer electrolyte (SPE) using Zn-MOF-74 to overcome ion conductivity and stability barriers in solid-state sodium batteries. The research, published in **Advanced Materials**, achieves a room-temperature ionic conductivity of $1.02 \times 10^{-3} \text{ S cm}^{-1}$ and a wide electrochemical window of 5.1 V.

Key Findings

A research team led by Professor Hong Zhensheng has developed a high-performance SPE-Zn-MOF composite electrolyte that significantly improves the performance of all-solid-state sodium batteries. The electrolyte achieves a room-temperature ionic conductivity of $1.02 \times 10^{-3} \text{ S cm}^{-1}$ and increases the sodium-ion transference number to 0.84. Additionally, the electrochemical stability window has been expanded to 5.1 V, addressing previous limitations regarding low ion transport efficiency and restricted operating voltages in polymer electrolytes.

Technical Details

The team moved away from traditional "trial-and-error" research by employing a data-driven approach. By integrating unsupervised learning and random forest models, they constructed a database of 592 M-MOF-74 structures. Through high-throughput screening of multi-dimensional parameters, Zn-MOF-74 was identified as the optimal functional filler for the PVDF-based solid electrolyte.

The mechanism relies on the unique Lewis acid sites of Zn^{2+} , which facilitate sodium salt dissociation and inhibit polymer crystallization. This process enables the in-situ construction of a stable, NaF-rich protective layer at the battery interface, effectively suppressing interface side reactions during cycling.

Background and Context

Solid-state sodium batteries are targeted for power batteries and large-scale energy storage due to the abundance and low cost of sodium resources. While solid polymer electrolytes (SPEs) offer advantages in processability and cost, the industry has long struggled with three bottlenecks: low room-temperature ionic conductivity, frequent interface side reactions, and narrow electrochemical windows.

Significance and Outlook

The findings, published in **Advanced Materials** (CAS Tier 1 TOP journal, impact factor 29.4), provide a new paradigm for the precise, data-driven design of solid electrolytes. This technical accumulation is intended to directly support the product development and technical iteration of Duneng Battery Technology (Jiaxing) Co., Ltd., which is invested in by Huaqing Holding Group. The goal is to accelerate the engineering transformation of these results to resolve core issues regarding safety, cost, and lifespan in energy storage batteries.

Source: https://www.sohu.com/a/1089724723_100102218

Collected: October 24, 2026 | Automated Research System (AI)