24 November 2025

ALTECH – SILUMINA ANODES™ UNDER ASSESSMENT BY MAJOR BATTERY PRODUCER

Highlights

- Leading global battery manufacturer initiates collaboration
- NDA executed for confidential technical evaluation
- Silicon-enhanced anodes attract strong industry interest
- Samples manufactured and shipped for formal testing at battery group
- Industry notes unmatched low-percentage silicon performance
- Partner requests graphite-coating trials by Altech
- Latest testing results achieve 1,000 cycles at 83% retention

Altech Batteries Limited ("Altech" or "the Company") is pleased to announce a significant and strategically important development in its Silumina Anodes™ project, following formal engagement initiated from a leading global battery manufacturer and one of the world's largest electric-vehicle battery manufacturer ("Battery Group"). The Battery Group approached Altech expressing strong interest in the Company's proprietary high-performance silicon-enhanced anode technology. This unsolicited approach represents a major validation of the technical progress achieved by Altech and underscores the growing global recognition of the breakthrough potential of its alumina-coated silicon innovations.

Following initial discussions, a mutual Non-Disclosure Agreement (NDA) was executed to enable the confidential technical exchange and evaluation of materials. As part of this collaboration, Altech has prepared and supplied Silumina Anodes™ samples to the Battery Group. These samples, developed under the leadership of Altech's Chief Technical Officer Dr Jingyuan Lui, have now been shipped to the Battery Group for formal testing in their advanced battery-evaluation laboratories in China.

The Battery Group's team, during preliminary discussions, indicated that across the industry they have not yet seen silicon additions deliver such meaningful performance improvements at low percentages. Traditionally, attempts to integrate silicon into commercial lithium-ion anodes have been challenged by expansion-related degradation, unstable solid-electrolyte interphase (SEI) formation and rapid cycle-life fade. The strong performance of Altech's coated silicon, achieved with only modest silicon loading, was highlighted as particularly noteworthy. The Battery Group acknowledged that very few material suppliers globally are producing silicon additives with this level of stability, consistency, and real-world applicability. This early feedback reinforces the technical advantage and disruptive potential of Altech's process.

Altech Batteries Limited
ASX:ATC
ABN 45 125 301 206

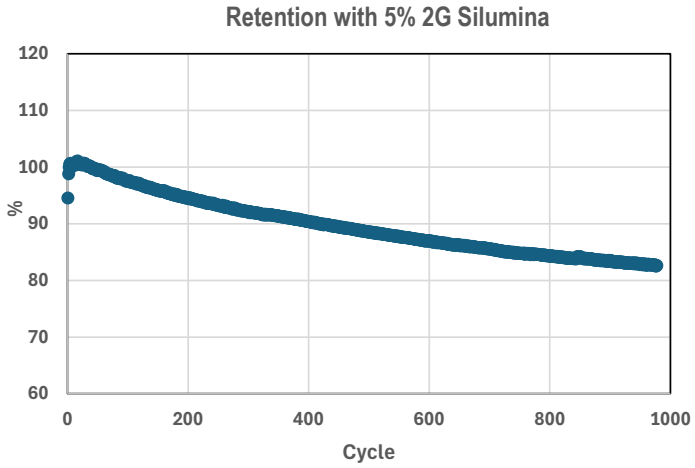
Suite 8, 295 Rokeby Road,
Subiaco, Western Australia
6008 Australia

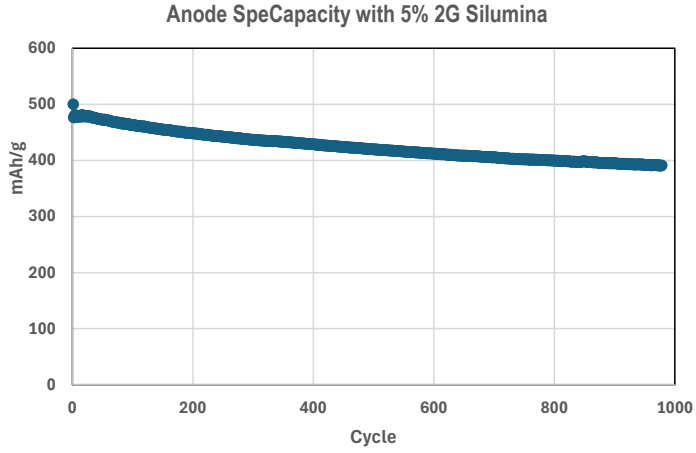
Telephone: +61 8 6168 1555
e-mail: info@altechgroup.com
Website: www.altechgroup.com

The Battery Group has also requested that Altech undertake coating trials on their supplied graphite material to assess the performance impact of integrating Altech's proprietary alumina technology directly onto their own anode substrate. Under the NDA, the Battery Group has dispatched several kilograms of representative graphite samples to Altech's Perth laboratory, where Dr Lui's team will apply the Company's coating process and prepare evaluation batches. These coated graphite samples will then be returned to the Battery Group for benchmarking against their internal standards, providing a direct comparison of how Altech's technology enhances their preferred graphite formulations.

UPDATE OF LONG CYCLE SILUMINA TESTING

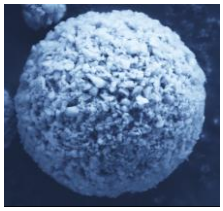
Altech announced on 9 October 2025 a major advancement in its Silumina Anodes™ project, achieving the strongest battery-cycling performance recorded to date for its proprietary alumina-coated spherical silicon anode material. Since that announcement, the latest test results now demonstrate an impressive **83% capacity retention after 1,000 charge–discharge cycles** with a **5% Silumina Anodes™ addition** to a standard graphite anode. This represents a significant milestone for the Silumina Anodes™ technology, confirming both its durability and real-world commercial potential. Importantly, such cycle-life performance places Altech's material at the **forefront of next-generation silicon-enhanced anode** technologies, strengthening its position in the rapidly evolving global battery materials market.





TECHNOLOGY EXPLAINED

Silumina Anodes™ Technology Explanation →
https://youtu.be/Vc5XcmPSAIs



HOW SILUMINA ANODES™ IS MADE

Altech's spherisation process transforms irregular silicon particles into perfectly rounded, alumina-coated spheres that integrate seamlessly within graphite anodes. The process begins with submicron silicon powders that are uniformly coated with a nanolayer of high-purity alumina, buffering against volume expansion during lithiation. These coated particles are then spherified through a precision-controlled thermal and mechanical process that rounds their geometry (refer Figure 1). When blended into the graphite matrix, the spherical Silumina Anodes™ particles naturally occupy microscopic voids, where they can expand and contract freely during cycling without damaging the surrounding structure (refer Figure 2). This optimised configuration mitigates mechanical stress, maintains electrode integrity, and enhances electrical connectivity. With only a 5% addition, the design achieves >40% capacity boost while preserving exceptional cycle stability over extended use.

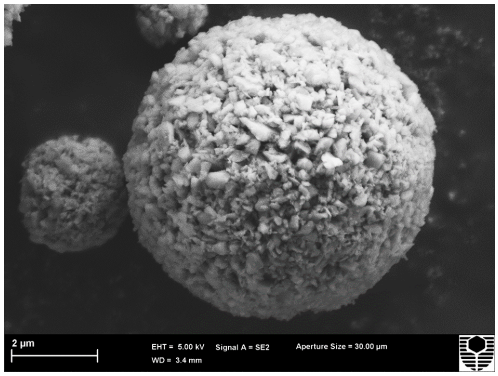


Figure 1 – SEM Image, An Alumina Treated Silicon Sphere

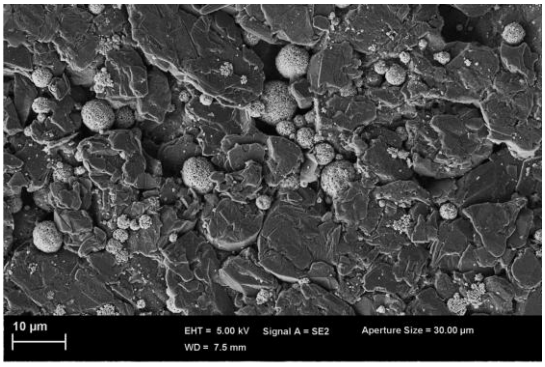


Figure 2 – SEM Image, Silicon Sphere Distributed in Graphite Voids

Altech's Managing Director Iggy Tan stated *"This engagement from the world's largest battery manufacturer is a powerful validation of our Silumina Anodes™ technology. Their early feedback, particularly noting they have not seen silicon additions perform this effectively at such low levels, reinforces the significance of our breakthrough. We are excited to advance this collaboration under the NDA and look forward to demonstrating how Altech's coating technology can further enhance their graphite and anode performance."*

End

Authorised by: Iggy Tan (Managing Director)

Altech Batteries Limited
ASX:ATC
ABN 45 125 301 206

Suite 8, 295 Rokeby Road,
Subiaco, Western Australia
6008 Australia

Telephone: +61 8 6168 1555
e-mail: info@altechgroup.com
Website: www.altechgroup.com

Altech Batteries Interactive Investor Hub

Altech's interactive Investor Hub is a dedicated channel where management interacts regularly with shareholders and investors who wish to stay up-to-date and to connect with the Altech Batteries leadership team. Sign on at our Investor Hub https://investorhub.altechgroup.com or alternatively, scan the QR code below.

– end –

For more information, please contact:

Corporate

Iggy Tan
Managing Director
Altech Batteries Limited
Tel: +61 8 6168 1555
Email: info@altechgroup.com

Martin Stein
CFO & Company Secretary
Altech Batteries Limited
Tel: +61 8 6168 1555
Email: info@altechgroup.com

About Altech Batteries Ltd (ASX:ATC) (FRA:A3Y)

CERENERGY® Batteries Project

Altech Batteries Ltd is a specialty battery technology company that has a joint venture agreement with world leading German government battery institute Fraunhofer IKTS ("Fraunhofer") to commercialise the revolutionary CERENERGY® Sodium Chloride Solid State (SCSS) Battery. CERENERGY® batteries are the game-changing alternative to lithium-ion batteries. CERENERGY® batteries are fire and explosion-proof; have a life span of more than 15 years and operate in extreme cold and desert climates. The battery technology uses table salt and is lithium-free; cobalt-free; graphite-free; and copper-free, eliminating exposure to critical metal price rises and supply chain concerns.

The joint venture is commercialising its CERENERGY® battery, with plans to construct a 120 MWh production facility on Altech's land in Saxony, Germany. The facility intends to produce CERENERGY® battery modules to provide grid storage solutions to the market.

AMPower Sodium Nickel Chloride Battery Sales Project

Altech Batteries Ltd has immediate entry into the sodium nickel chloride (SNC) battery market in Australia, Europe and United States of America through a strategic collaboration and distribution agreement with the current largest SNC battery manufacturer AMPower, a subsidiary of the Chilwee Group. Chilwee is the third largest e-mobility battery manufacturer in China, with an annual turnover of US$20 billion, 23,000 employees, and production capabilities spanning lead-acid, lithium-ion, sodium-ion, and next-generation battery technologies. AMPower currently manufactures conventional Zebra-type sodium nickel chloride ($Na/NiCl_2$) solid-state batteries—using the same chemistry as CERENERGY®—but mainly for the small Uninterrupted Power Supply (UPS) industrial market. AMPower was originally established as a joint venture with General Electric to produce sodium nickel chloride UPS batteries under the Durathon brand.

AMPower will produce sodium nickel chloride solid state UPS batteries for Altech which will be under Altech brand, supervision and specification for distribution across Australia, Europe, and the USA.

Silumina Anodes™ Battery Materials Project

Altech Batteries Ltd has licenced its proprietary high purity alumina coating technology to 100% owned subsidiary Altech Industries Germany GmbH (AIG), which has finalised a Definitive Feasibility Study to commercialise an 8,000tpa silicon alumina coating plant in the state of Saxony, Germany to supply its Silumina Anodes™ product to the burgeoning European electric vehicle market.

This Company's game changing technology incorporates high-capacity silicon into lithium-ion batteries. Through in house R&D, the Company has cracked the "silicon code" and successfully achieved a 30% higher energy battery with improved cyclability or battery life. Higher density batteries result in smaller, lighter batteries and substantially less greenhouse gases, and is the future for the EV market. The Company's proprietary silicon product is registered as Silumina Anodes™.

The Company is in the race to get its patented technology to market, and has completed a Definitive Feasibility Study for the construction of a 8,000tpa Silumina Anodes™ material plant at AIG's industrial site within the Schwarze Pumpe Industrial Park in Saxony, Germany. The European silicon feedstock supply partner for this plant will be Ferroglobe. The project has also received green accreditation from the independent Norwegian Centre of International Climate and Environmental Research (CICERO). To support the development, AIG has commenced construction of a pilot plant adjacent to the proposed project site to allow the qualification process for its Silumina Anodes™ product. AIG has executed NDAs with German and North American automakers and battery material supply chain companies.

Silumina Anodes™