Archer Materials
Technology

Archer Materials Limited (ACN: 123 993 233)
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ASX Announcement (ASX: **AXE**) 29 July 2026

Archer Advances Biochip Towards Clinical-Ready Device Development

Highlights

- Archer commences industrial design for a clinically deployable, manufacturable potassium testing device, advancing the program from technology development towards regulatory-ready product development.
- Test work demonstrated Hylid Diagnostics' haemolysis sensing technology integrated with Archer's Biochip potassium measurement, detecting plasma free haemoglobin at concentrations as low as 10 mg/dL.
- Continued work on expanding the Biochip platform by demonstrating testing of lithium levels with Archer's prototype system achieving sensitivity over the range of clinically relevant blood levels.
- Progress supports preparation for a planned pre-submission meeting with the U.S. Food and Drug Administration (FDA).

Archer Materials Limited ("Archer", the "Company", "ASX: AXE"), a quantum company developing computing, sensing, and medical diagnostic technologies, has successfully qualified its haemolysis sensing capability of its Biochip potassium testing system and expanded testing to show feasibility of additional applications.

Archer Materials CEO Dr. Simon Ruffell said,

"Over the past two years Archer has developed and validated the core sensing performance of its Biochip which will bring laboratory potassium testing to point-of-care testing. With the sensing performance now established, our priority is to integrate the technology into a reliable, easy-to-use system that can deliver meaningful benefits for patients and healthcare providers."

"This is an important inflection point for the Company and our Biochip program as we advance qualification and product development in parallel, while continuing to reduce technical risk."

"Our Biochip program is being developed as a sensing platform with multiple end-markets and applications in mind, and it is exciting to see the progress on other feasibility work like the lithium testing."

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Archer has commenced the industrial design of the Biosensor device for routine clinical use, including assessment of clinical workflows, point-of-care usability, and scalable manufacturing.

The Biosensor device is built on the Company's Biochip and is being designed for use by both patients and healthcare professionals, with the aim of reducing testing time and costs, supporting improved patient outcomes, being manufacturable at scale, and, importantly, being suitable for future regulatory submission.

These new activities are a step forward in progressing our beta prototype with development to date being focused on integration of the sensing Biochip into a cartridge and readout electronics (see announcement 15 May 2026). However, with the beta-prototype Biosensor targeted for use in clinical settings, manufacturability and usability in clinical workflows are essential.

The manufacturability aspect of the work also builds on Archer's earlier development program with imec (ASX announcements 29 October 2025 and 15 May 2026) which successfully demonstrated testing feasibility of the Company's Biochip and has progressed to production of sensing chips compatible with high-volume manufacturing.

Progress on haemolysis sensing integration

Archer has successfully completed test work to qualify Hylid Diagnostics' haemolysis sensing technology which can be integrated with its Biochip platform. Detection of plasma free haemoglobin at concentrations as low as 10 milligrams per decilitre (mg/dL) and measurement accuracy of ~10 mg/dL up to 100s mg/dL has been achieved. This sensitivity is within the range clinical laboratories typically use to flag haemolysis that could distort potassium readings.

The result demonstrates the potential to combine Hylid's haemolysis detection with Archer's potassium sensing technology as part of the development of an integrated potassium testing Biosensor system.

Haemolysis occurs when red blood cells are damaged during or after blood collection, which can artificially increase potassium readings and produce false positive results. Detecting haemolysis alongside potassium is important to improve confidence in results from finger-prick blood samples.

This represents an important technical milestone in the development of Archer's Biochip-based potassium testing platform and supports further integration and prototype development of a rapid, less invasive point-of-care potassium test.

Expanding the Biochip platform – lithium testing

Archer has continued to expand the capability of its Biochip platform through the development of lithium sensing beyond its early feasibility work (see announcement 28 July 2025), with sensitivity high enough to measure with accuracy of better than 0.1 millimolar (mM), over clinically relevant levels, required for therapeutic lithium-based drug monitoring.

The Company tested its current Biosensor prototype against test buffer solutions of known lithium concentration, ranging from approximately 0.2 to 2.4 mM, to assess measurement accuracy across the clinically relevant range. The sensor measured concentrations that closely matched actual lithium levels across the full range tested, with all measurements within 0.1 mM of the true value (see Figure 1).

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Lithium therapy requires regular blood monitoring as lithium-based treatments have a narrow therapeutic range, where the margin between an effective dose and a toxic one is slim. A rapid point-of-care lithium test could consolidate testing and treatment decisions into a single clinical visit, replacing the current process of separate blood collection, laboratory analysis and follow-up appointments. The results demonstrate the broader potential of Archer's Biochip-based platform to support additional point-of-care blood tests beyond potassium, leveraging the same semiconductor sensing technology and medical device architecture.

The Company is also in preliminary discussions with a leading international partner regarding potential collaboration for lithium tester device development and future clinical studies.

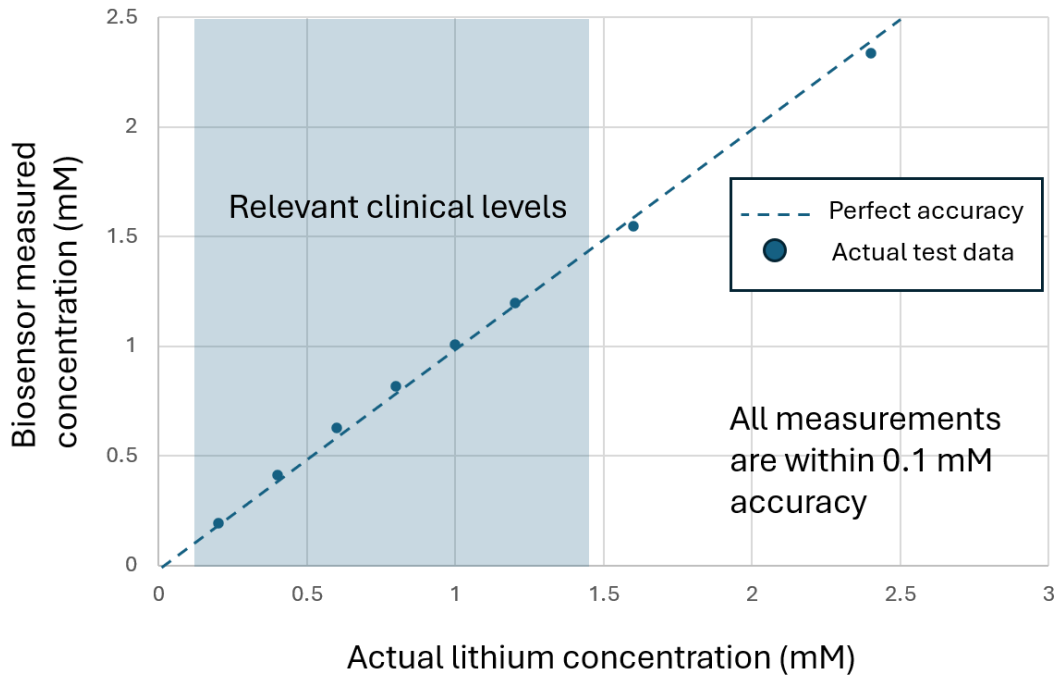

Figure 1. Response of Archer's current sensor prototype to lithium levels in test buffer solutions. The sensor measures lithium levels with accuracy better than 0.1 mM and is sensitive across the clinically relevant levels of lithium.

The Board of Archer authorised this announcement to be given to ASX.

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About Archer

Archer is a quantum technology company that operates within the semiconductor industry. The Company is developing advanced semiconductor devices, including chips relevant to quantum computing, sensing, and medical diagnostics. Archer utilises its global partnerships to develop these technologies for potential deployment and use across multiple industries. www.archerx.com.au