Archer Materials
Technology

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ASX Announcement (ASX: **AXE**) 7 May 2025

Presentation – Semiconductor Conference 2025

Archer Materials Limited ("Archer", the "Company", "ASX: AXE") is pleased to enclose a copy of the presentation to be delivered by Archer's Chief Executive Officer, Simon Ruffell, at the Semiconductor Conference on Wednesday, 7 May 2025.

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

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About Archer

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

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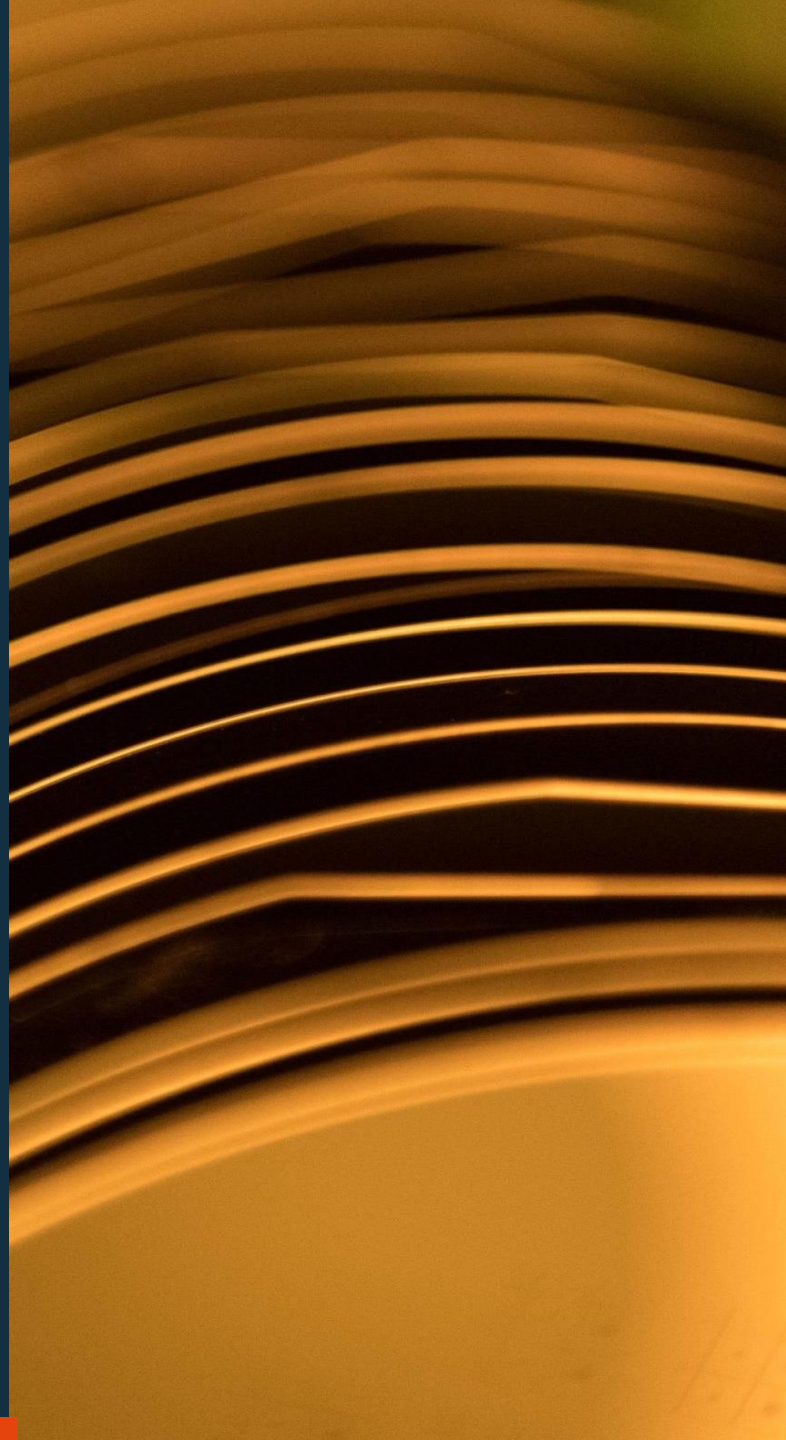
Archer Materials

Semiconductor Conference 2025

7 May 2025



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This presentation contains information which was reported in ASX announcements lodged between 1 October 2017 and 13 February 2024 (together the "Announcements"). All material assumptions and technical parameters set out in the Announcements continue to apply and have not materially changed. The Announcements can be viewed online at https://www.archerx.com.au.

Certain statistical and other information included in this presentation is sourced from publicly available third party sources and has not been independently verified.

Agenda

1. Our Technology
2. Biochip
3. Quantum Computing
4. TMR Sensor
5. Questions

Our Technology

Archer Materials is building on its foundation of carbon-based technologies to develop products that will help solve critical problems.

Quantum

A carbon-based quantum device for applications primarily in computing and the possibility of integrating with other electronics.

Key milestone: Qubit demo 1HCY26

Biochip

Highly sensitive, chip-based sensors for at-home management and treatment of chronic diseases.

Key milestone: Demo prototype end of 2025

TMR Sensor

Highly sensitive magnetic sensors, with low power and high bandwidth operation. Wide range of applications.

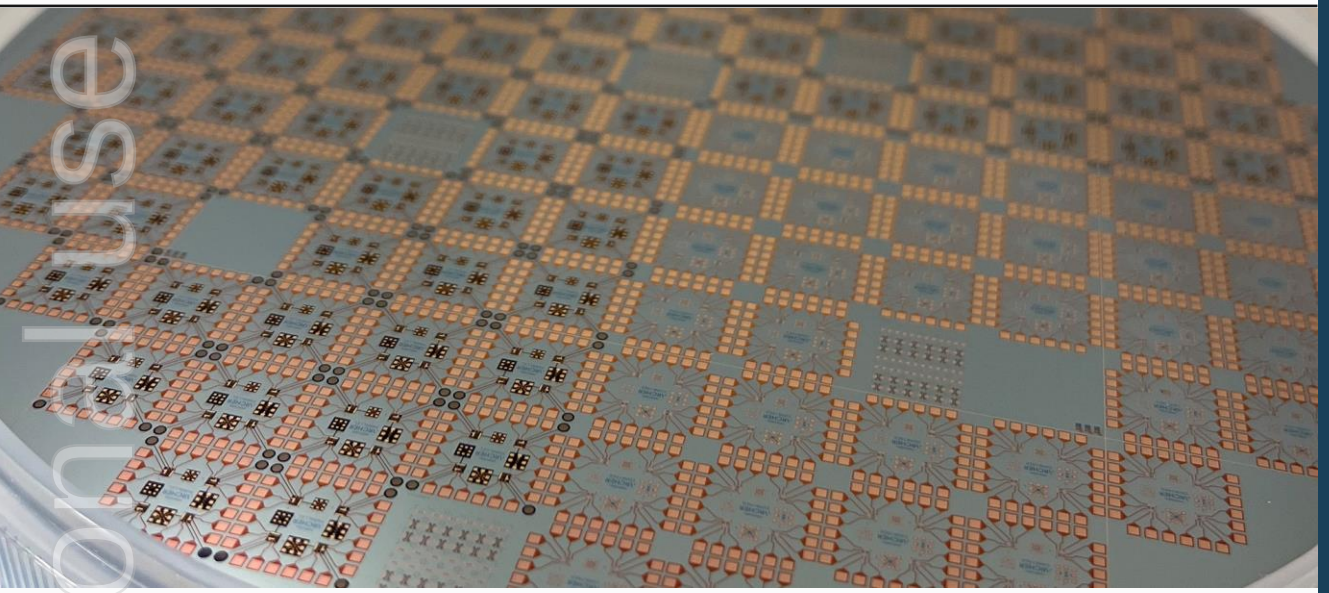
Key milestone: Identification of application end of 2025

Biochip

01

High-Value Problem

Archer's biochip uses highly sensitive, high speed, low power sensors to detect ions in blood. The chip will be integrated into an at-home testing system that will analyse a finger prick of blood.



- Over 850M people (>10% of global population) suffer from chronic kidney disease.
- More than US$3B total addressable market within the US$80B+ renal disease space.
- Kidney disease patients are at high risk of lethal potassium imbalances (kidneys regulate electrolytes).
- Potassium testing is lab-based, monthly, and too infrequent for timely intervention.
- Extendable to heart disease and treatment.
- Extendable to other ion sensing applications in medicine and agriculture.

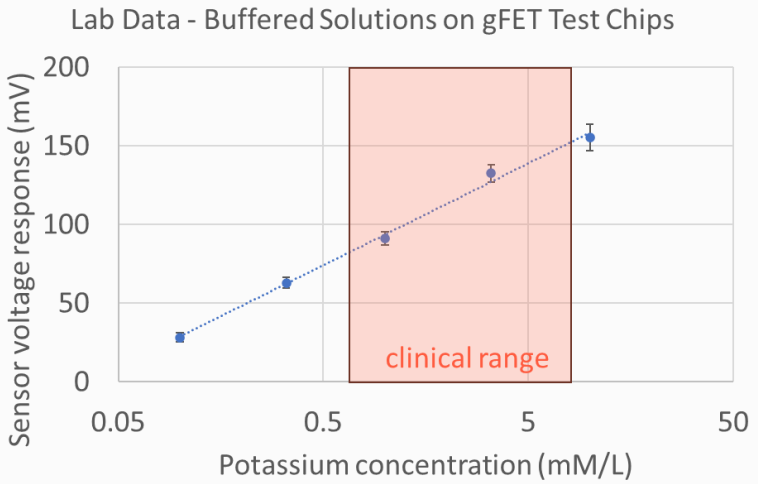
1. Kidney Health Australia (https://kidney.org.au/kidney-check-heart-diabetes-blood-pressure)
2. Yole "Biosensors Marketing Report 2024-32", Market Research Future "Renal Disease Market Report". Bottom-up estimate using refs above

At-home Potassium Sensor - Roadmap

Phase gate development process for a diagnostic medical device regulated under ISO13485

Proof of concept	Feasibility	Development & Optimisation	Scale up & transfer to manufacturing	Verification & validation	Launch

- Initial data.
- Foundry supplier sourced.
- Academic support.



At-home Potassium Sensor - Roadmap

Phase gate development process for a diagnostic medical device regulated under ISO13485

Proof of concept | **Feasibility** | **Development & Optimisation** | Scale up & transfer to manufacturing | Verification & validation | Launch

2025

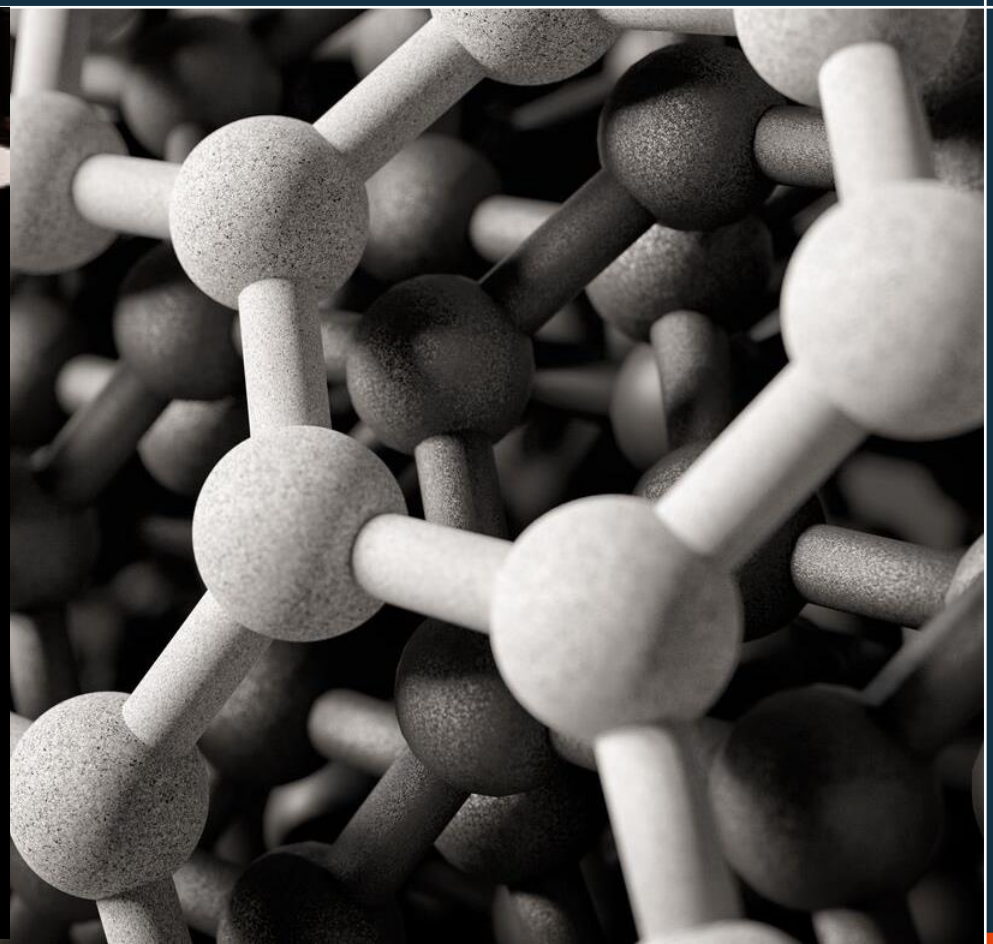
- Work ramping up in Sydney, Archer's 1st prototype.
- Building strategic partnerships: medical diagnostics companies, academic groups, product development consortia.
- Building access to clinical advisors, potential trial locations.
- Developing regulatory and product placement/use-case strategy.

Target of working prototype by end of 2025. Develop regulatory and product placement plan.

Archer aiming to begin clinical trials in 2026.

Note: Representative image only. This is a Siemens Epoc blood analyser.

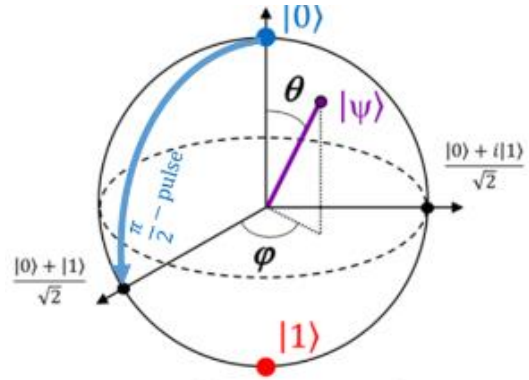
Quantum



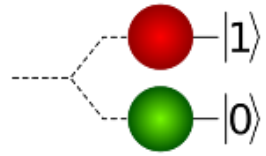
02

Quantum Computing

Quantum computing via qubits made in Archer's novel carbon



$$|\psi\rangle = \cos\frac{\theta}{2}|0\rangle + e^{i\varphi}\sin\frac{\theta}{2}|1\rangle$$



1010
1010

Classical, Digital bit
Either 0 or 1

Computers solve problems in a sequential fashion

Quantum Qubit
0 and 1 at the same time

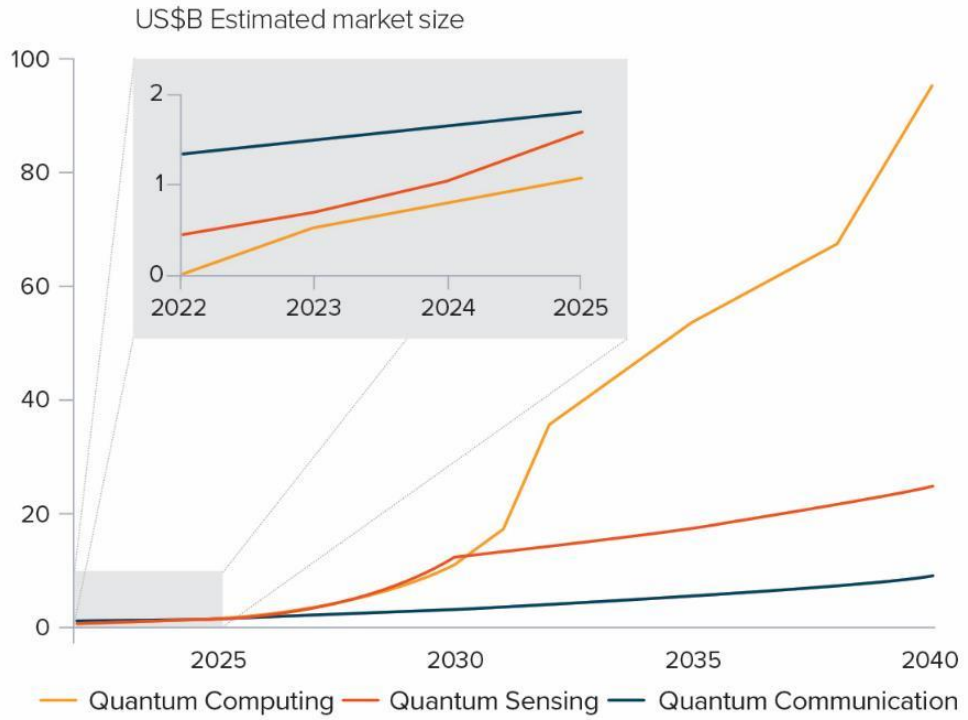
Computers solve problems by evaluating solutions simultaneously

Quantum Technology: The Next Frontier

Archer considers quantum technology to be the next great technological advance.

- Archer is the only ASX-listed quantum company.
- Adoption of quantum tech expected to increase with quantum hardware maturity.
- Quantum computing and sensing is expected to rapidly increase in share of total quantum value.

Quantum Technology Market Growth Projections 2025-2040

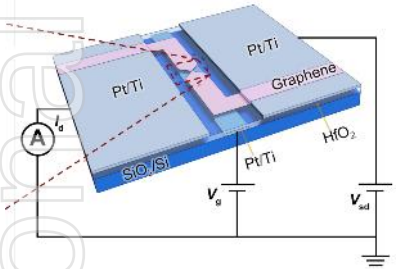


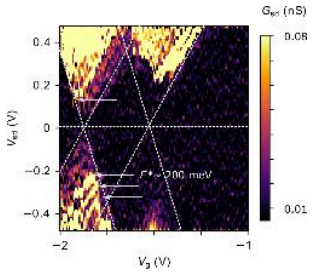
Sources:
BCG analysis
Krelina, "Quantum technology for military applications" EPJ Quantum Technology (2021); IBM quantum roadmap; IonQ quantum roadmap

Status of Archer Qubit Development

01

Confinement i.e. isolation of a single electron (spin)





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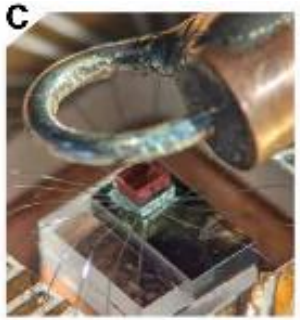
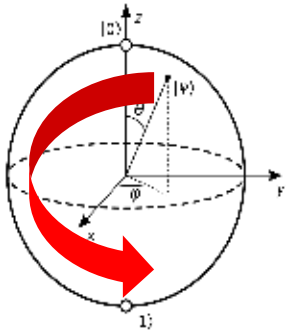
Control (Global/Local)





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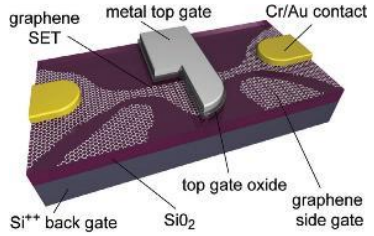
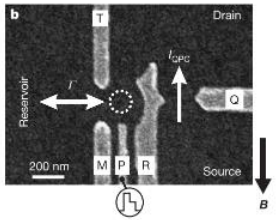
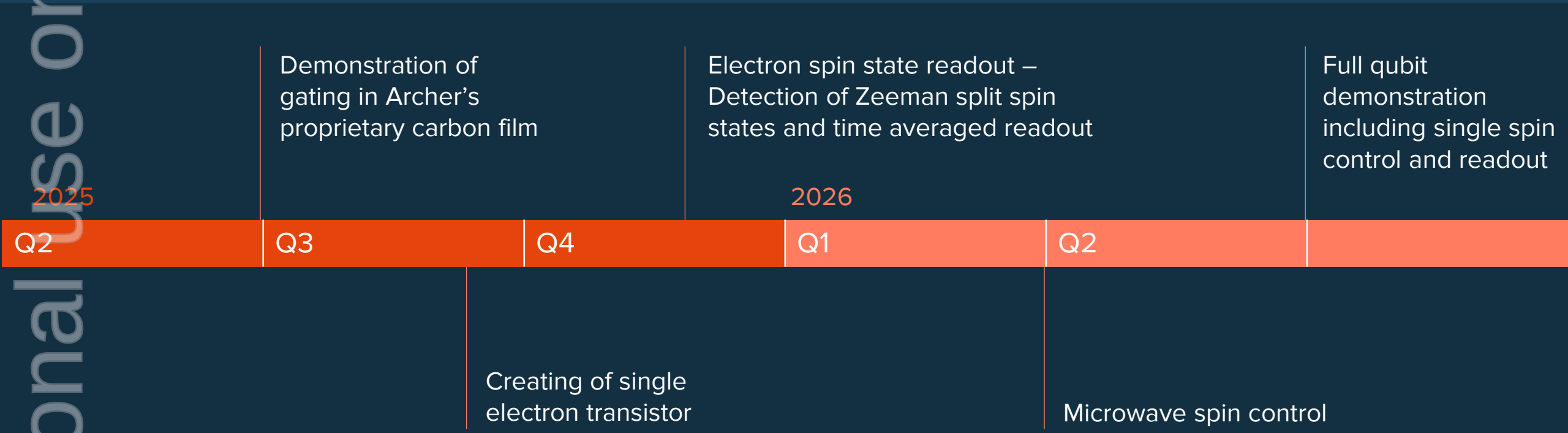
Readout (device built around graphene single electron transistor)



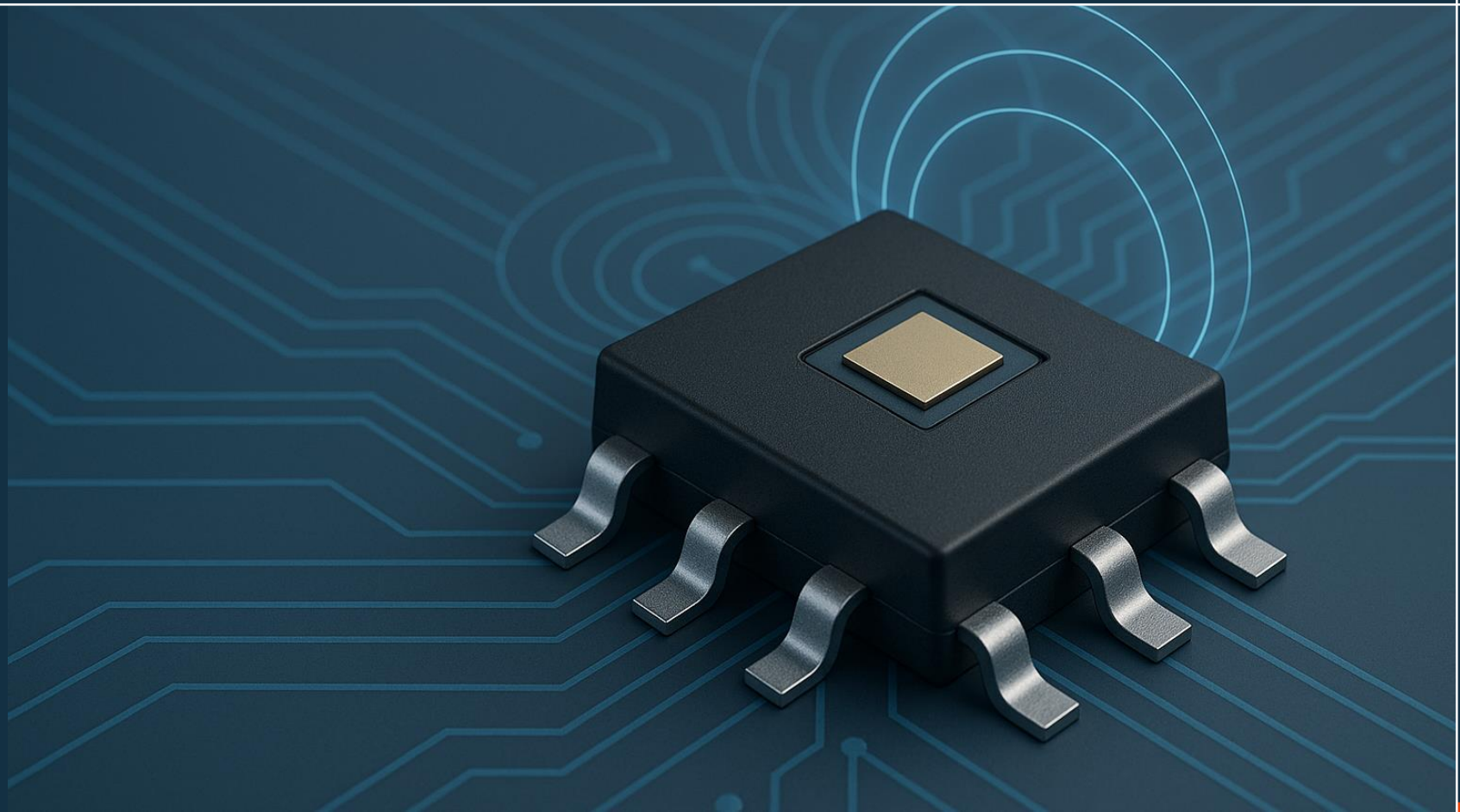


Qubit Roadmap

Work will be extended on devices built around nanodots of carbon. Targeting an Elzerman qubit architecture demonstration in 2026.



TMR Sensor



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Tapping into TMR Sensor Market Growth

- Overseas foundry developing TMR sensor with Archer for industrial applications.
- TMR sensors have potential applications for AI, data centers, automotive, and IoT implementation.
- TMR leverages quantum phenomena to provide a performance edge over classical incumbents.
- Part of Archer's ^{12}CQ project, leveraging expertise in quantum mechanics to design advanced TMR sensors.
- We have been investigating potential applications, partners, and potential customers.
- 2025: is to identify a lead application and build product development strategy.
- 2026: launch pilot products and begin commercialization.

Our Foundations

Archer has the foundations in place to advance its technology towards commercialisation in global markets.

Future technologies

Archer's devices look to solve high value problems

Strong partnerships

Strong industry partnerships and links with leading research institutes.

Growing markets

Archer's technologies have a range of applications across growing markets such as medical diagnostics, computing, sensing, and massive data like AI.

IP portfolio

A growing IP portfolio of granted and pending patents across key markets such as North America, APAC, and Europe.

Thank you

ASX Code: AXE

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

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