

ASX Announcement ([ASX: AXE](#))

8 November 2024

TMR sensor project presentation

Archer Materials Limited ("Archer", the "Company", "ASX: AXE"), a semiconductor company advancing the quantum technology and medical diagnostics industries, releases its presentation on the tunnel magnetoresistance ("TMR") sensor project (see ASX announcement 10 October 2024).

The presentation covers TMR sensors and their benefits, their role in Archer's ¹²CQ quantum project, market growth, and potential applications in automotive, internet-of-things, and data centres, and upcoming milestones.

The presentation is attached to this announcement.

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

Investor enquiries

Eric Kuret
+61 417 311 335
eric.kuret@automicgroup.com.au

Media enquiries

Dylan Mark
+61 475 783 675
dylan.mark@automicgroup.com.au

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




12CQ TECHNOLOGY
BIOCHIP TECHNOLOGY

ARCHER

Archer Materials

TMR Sensor Project | November 2024

Unlocking market potential through Quantum Sensing

Disclaimer

The material contained in this document is a presentation of general information about the activities of Archer Materials Ltd and its related bodies corporate (together the "Archer Group"), current as at the date of this presentation. It is provided in summary and does not purport to be complete. You should not rely upon it as advice for investment purposes, as it does not take into account your investment objectives, financial position or needs. These factors should be considered, with or without professional advice, when deciding if an investment is appropriate. To the extent permitted by law, no responsibility for any loss arising in any way (including by way of negligence) from anyone acting or refraining from acting as a result of this material is accepted by the Archer Group, including any of its related bodies corporate.

This document may contain forward-looking statements with respect to the financial condition, results of operations, and business strategy of the Archer Group. These forward-looking statements are based on estimates, projections and assumptions made by the Archer Group about circumstances and events that have not yet taken place. Although the Archer Group believes the forward-looking statements to be reasonable, they are not certain. Forward-looking statements involve known and unknown risks, uncertainties and other factors that are in some cases beyond the Archer Group's control, and which may cause actual results, performance or achievements to differ materially from those expressed or implied by the forward-looking statements (and from past results). The Archer Group makes no representation or warranty as to the accuracy of any forward-looking statements in this presentation and undue reliance should not be placed upon such statements. Forward-looking statements may be identified by words such as "aim", "anticipate", "assume", "continue", "could", "estimate", "expect", "intend", "may", "plan", "predict", "should", "will", or "would" or the negative of such terms or other similar expressions that are predictions of or otherwise indicate future events or trends. The forward-looking statements included in this presentation speak only as of the date of this presentation. The Archer Group does not intend to update the forward-looking statements in this presentation in the future.

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.



Archer set to tap into high growth TMR sensor market

- Overseas foundry to develop a tunnel magnetoresistance (“TMR”) sensor for Archer for commercial use in industrial applications.
- TMR sensors are ideal for many applications, including artificial intelligence, data centres, automotive, and the Internet of Things (IoT).
- TMR leverages quantum phenomena to provide a performance edge over classical incumbents.
- Part of Archer’s ¹²CQ project, and leveraging its expertise in quantum mechanics to design advanced TMR sensors.
- Archer will finalise its TMR sensor design in the coming weeks, with the first prototypes to be delivered before the end of the year.
- Early next calendar year, Archer will commence work to optimise the TMR sensor design and engage with potential customers, potentially bringing forward revenue opportunities while it continues 12CQ quantum development.



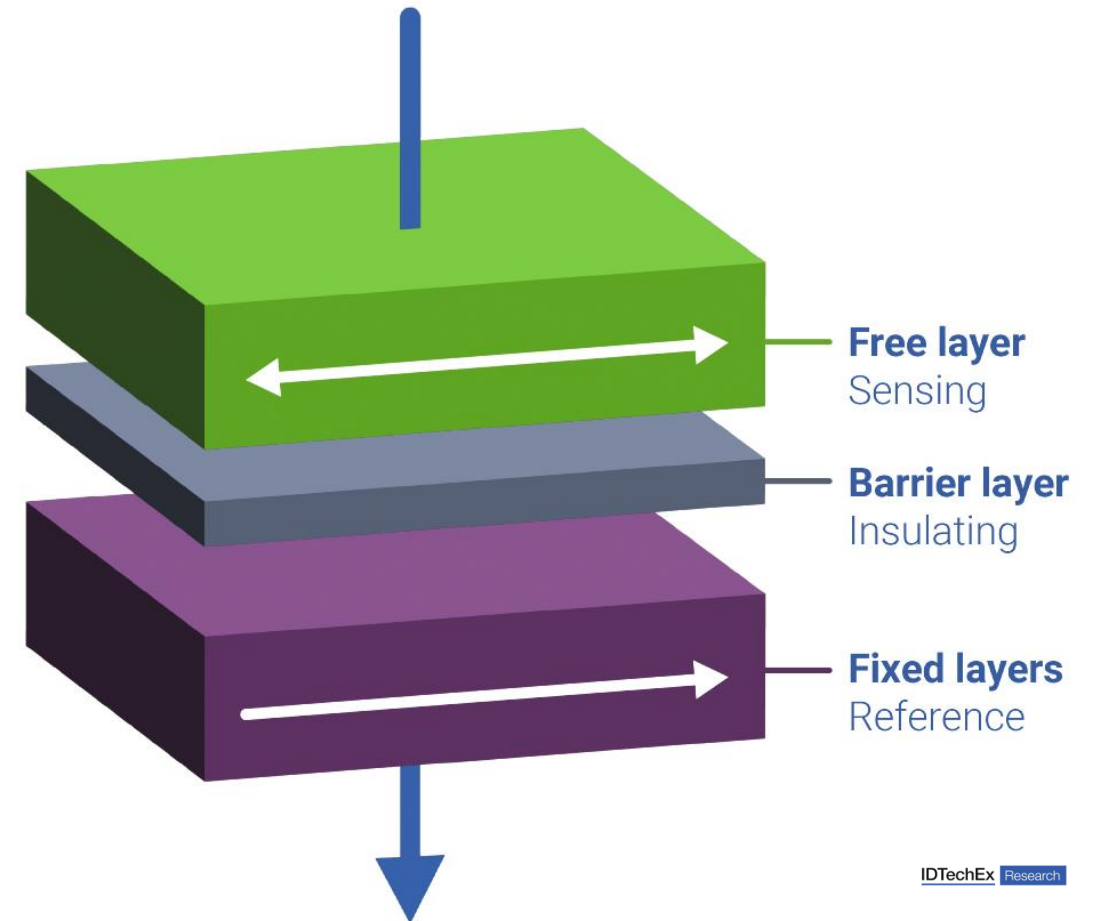
TMR Sensors – An introduction

What are TMR Sensors?

- Tunnelling Magnetoresistance (TMR) sensors detect currents and magnetic fields with high sensitivity.
- They are considered quantum sensors due to their precision and nanoscale functionality.

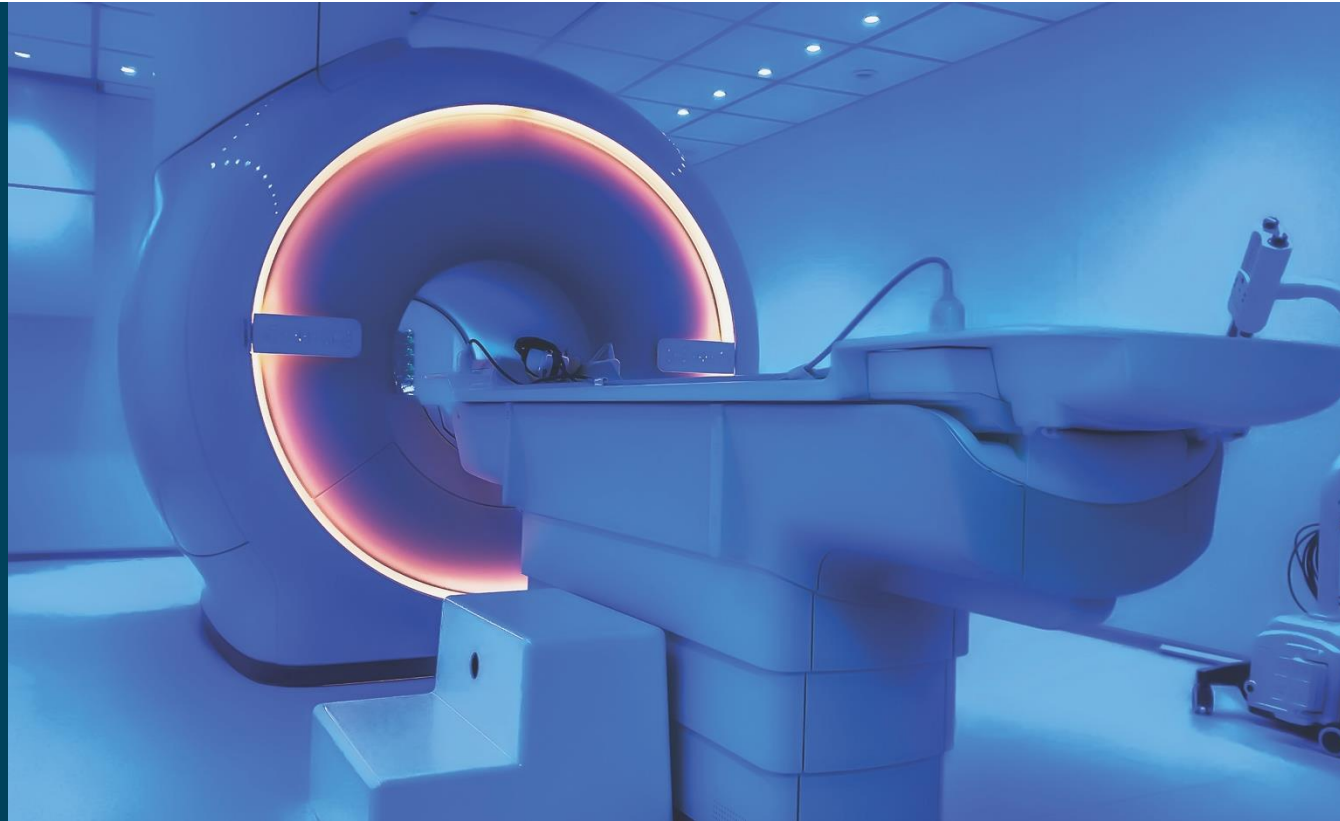
Why they matter?

Key applications in sectors requiring precise magnetic field detection (e.g., medical devices, automotive, consumer electronics).

























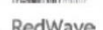





































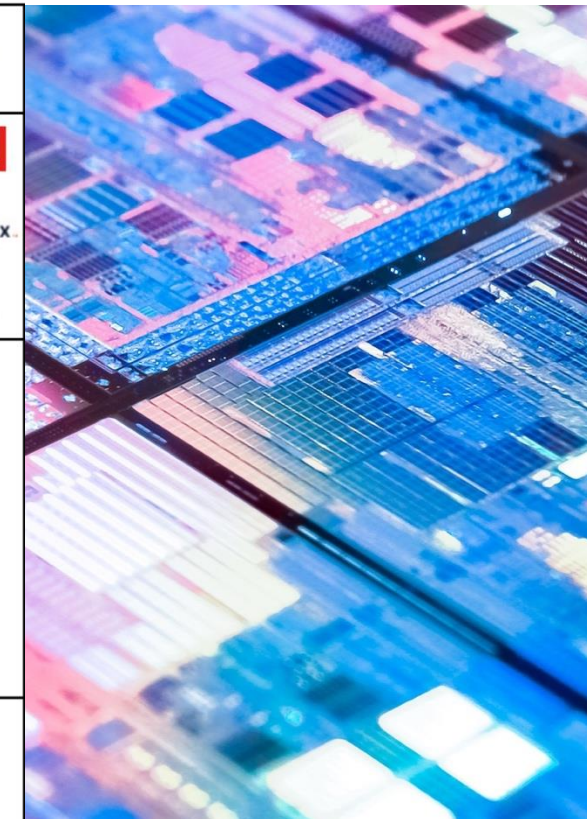
TMR Sensors – Key benefits

- High Sensitivity and Accuracy
- Ideal for detecting very small magnetic fields.
- Bidirectional sensing capabilities
- Low Power Consumption
- Enables use in battery-powered devices.
- Versatility
- Suited for various industries, including (but not limited to) automotive, medical devices, and IoT.



Quantum Sensor Industry

IDTechEx Research	Atomic Clocks	Gyroscopes	MAGNETIC FIELD SENSORS (TMR)	Magnetic Field Sensors (Other)	Gravimeters	Image Sensors and Other	Component/ Material Providers
Established Companies	  	 	    	       	 	 	       
Start-Ups/Early-Stage				        	   	  	
Platform Technologies	   						
Research Institutes/ Partners	         						



Market Size and Growth (CAGR)

Current Market Size

- The global TMR sensor market is approximately US\$802 million (2023).
- Expected to grow at a CAGR of 9-12% over the next five years, reaching over US\$1.8 billion by 2030*.

Key Drivers

Growth in automotive safety features, expansion of IoT devices, and increased demand for advanced healthcare technologies.

* Report Prime Market Research. TMR current sensor market.
Available at: <https://www.reportprime.com/tmr-current-sensor-r1376> (Accessed: 9 October 2024).



Why is Archer targeting TMR sensors?

Industry replacement of Hall effect sensors

TMR sensors are more sensitive, have higher bandwidth, and lower power consumption.

High Market Demand

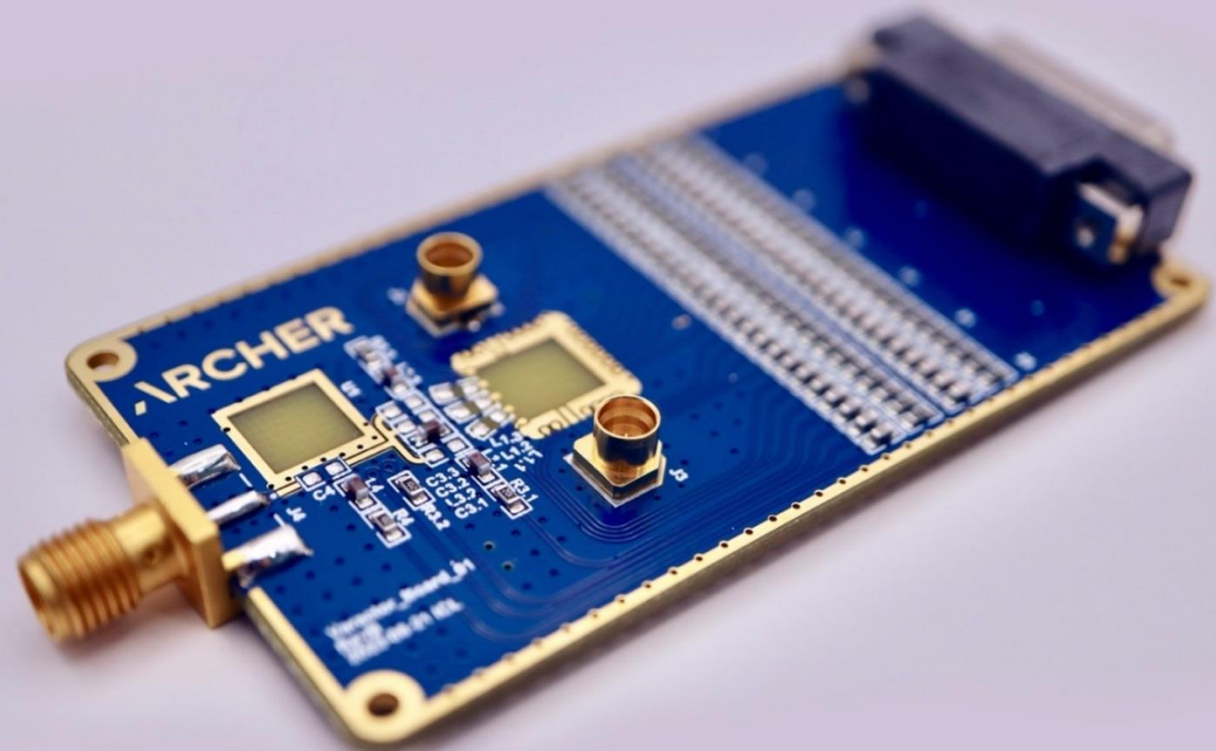
Growing industries, especially automotive and IoT.

Competitive Advantage

Archer's expertise in quantum computing gives us an edge in developing cutting-edge quantum sensors like TMR.

Proven Track Record

Archer's success in quantum technology positions us to pioneer this space.



Two-Year Milestones

Year 1

Complete R&D phase and prototyping with MultiDimension Technology.

Secure partnerships with manufacturers in key industries.

Year 2

Begin commercialisation and sales.

Launch pilot projects in key verticals with initial customers.

Leveraging Archer's Quantum Computing Team

Quantum Expertise

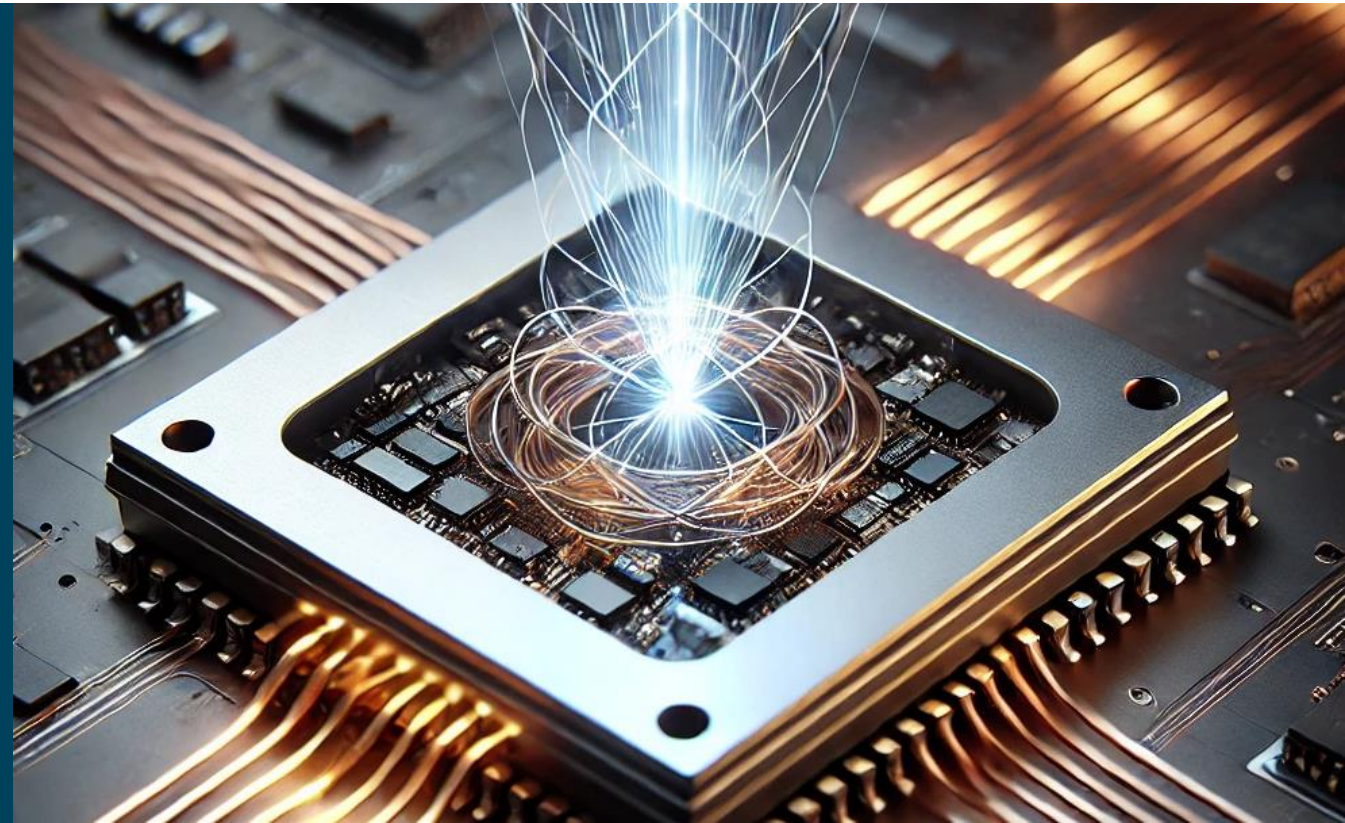
Archer's quantum computing team has the skill set to design highly sensitive quantum sensors.

Integration of Quantum Sensing

Leveraging quantum mechanics principles, Archer's TMR sensors will surpass traditional solutions in sensitivity and efficiency.

Strategic Synergy

Archer's expertise positions us ahead of competitors.



Thank you

ASX Code: AXE

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

Archer Materials Limited
(ABN 64 123 993 233)

E: hello@archerx.com.au Visit us at: archerx.com.au

Sydney

Level 2, 477 Pitt St
Sydney NSW 2000
Australia

Adelaide

Lot Fourteen, Frome Road
Adelaide SA 5000
Australia

Stay in touch

Shareholders are encouraged to take advantage of the benefits of electronic communications by electing to receive communication from the Company and its share registry electronically.

Shareholders can change their communication preferences through the registry website:
www.investorcentre.com

For more information about Archer's activities, and sign up to receive the latest news, reports, presentations and ASX released, please visit the following:

LinkedIn

www.linkedin.com/company/archerxau

Sign up to our Newsletter

<http://eepurl.com/dKosXI>