

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

19 May 2025

## Archer enters partnership with Paragraf for Biochip development

### Highlights

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- Archer has entered an agreement with Paragraf Limited to progress its Biochip for at-home testing for chronic kidney disease.
  - The six-month project will advance technical progress of Archer's at-home blood potassium sensor.
  - Paragraf will work with Archer on development of sensing protocols, quality checks, fabrication of graphene field effect transistors (gFETs), and proprietary methods of sensor functionalisation for improved blood potassium sensing accuracy.
  - The project will also focus on chip redesign towards final product as well as lifetime, stability, and robustness of the sensor.
  - The work will increase Archer's IP around the Biochip as well as feed into the work to integrate the sensor chip into a cartridge system.
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Archer Materials Limited ("Archer", the "Company", "ASX: AXE"), a semiconductor company advancing the quantum technology and medical diagnostics industries, has signed an agreement with UK graphene-based electronics company Paragraf Limited ("Paragraf"), to advance development of Archer's Biochip potassium ion sensor for testing of chronic kidney disease. The agreement will be in two stages, with each stage of work to be carried out over three months at a total estimated cost of A\$450,000 or £222,000.

The partnership will accelerate technical progress towards meeting the blood potassium sensing target product profile (TPP) using a gFET. Work performed by Paragraf with Archer will complement the activities ongoing in Sydney.

Stage one will involve developing and optimising measurement protocol, improving gFET quality checks, and proprietary work on the sensor functionalisation. The expected outcomes include enhanced sensor accuracy, as well as data to improve foundry fabrication processes and device qualification procedures.

Stage two will build on stage one and include chip redesign to move from lab testing devices to more product representative chips. The teams will also work on sensor stability, lifetime and robustness. These are key metrics in the TPP.

It is expected that the work will result in several pieces of intellectual property (IP) that will enable Archer's sensing product. All product-specific IP generated from the work in the partnership will be owned by Archer, in accordance with the agreement.

Paragraf is pioneering the commercialisation of mass-produced graphene-based electronic devices using standard semiconductor processes. Graphene Hall Sensors (GHS) and Graphene Field-Effect Transistors currently in production, and other semiconductor devices in development, make use of Paragraf's proprietary graphene growth process to fully harness the wonder material's myriad features.

Archer will be working with Paragraf's engineering and business development teams. Through the agreement, both teams will leverage their expertise in a range of fields from semiconductor manufacturing, biological sensing, chemistry, and the medical diagnostics industry. The development and learning on the sensing chip will feed directly into the ongoing work around integration with other sensing components as well as the product's cartridge design.

**Commenting on the Paragraf partnership, Simon Ruffell, CEO of Archer, said,**

"Formalising an agreement with Paragraf ensures the acceleration of the Biochip's development. The work will be critical for producing a first sensor prototype which will, in turn, allow us to continue building strategic partnerships to support latter stages of product development and clinical trials for regulatory approval."

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, sensing, and medical diagnostics. Archer utilises its global partnerships to develop these technologies for potential deployment and use across multiple industries.  
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