

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

11 June 2021

Archer progresses with semiconductor chip testing

Highlights

- Archer progresses its biochip development by establishing essential chip testing operations in a semiconductor fabrication environment.
 - Access to deep tech infrastructure allows Archer to build its chip technologies, including a graphene-based biochip for point-of-care medical diagnostics.
 - The global semiconductor industry is one of the most important drivers of the global economy as it is the basis of almost all technology[†].
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Archer Materials Limited (“Archer”, the “Company”, “[ASX: AXE](#)”) is pleased to provide shareholders with an update on the development of its biochip. Archer is strategically growing its capability in semiconductor production operations that are essential to the development and commercialisation of the Company’s biochip technology.

The Company previously announced that it has the ability to analyse the individual materials in the components of the biochip ([ASX ann. 26 Apr 2021](#)). The Company has now progressed to the stage where it has established testing and measurement for the chips themselves (Image 1).

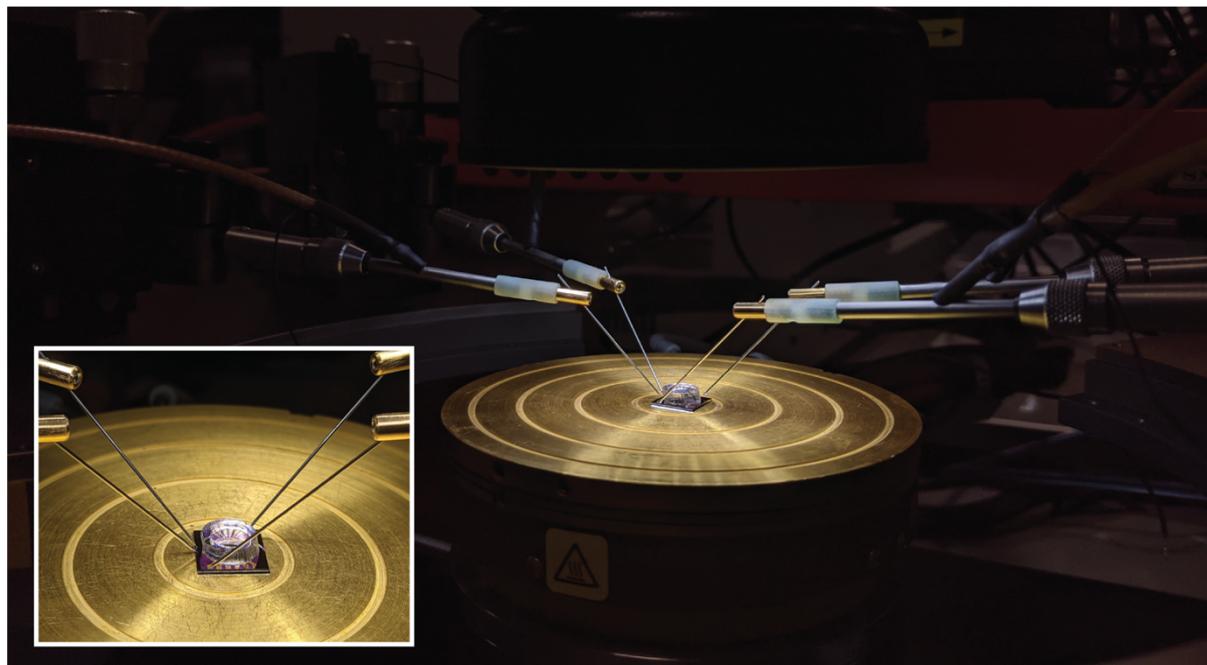


Image 1. Part of the semiconductor chip probe workstation. Inset: Testing of a chip 10mm x 10mm in size (purple colour) relevant to biochip development. The US and German manufactured state-of-art semiconductor chip prober and analysers are operated by Archer staff and housed in a specialised cleanroom inside a [world-class \\$150 million semiconductor research and prototype foundry](#).

[†] <https://www2.deloitte.com/us/en/insights/industry/technology/growing-semiconductor-market.html> and; <https://www.chiefscientist.nsw.gov.au/independent-reports/australian-semiconductor-sector-study>

Graphene-based transistors are core components of Archer's biochip technology

The Company recently expanded its access to institutional deep tech infrastructure to analyse and characterise the material properties of its devices (ASX ann. [26 Apr 2021](#)). The chip testing capabilities recently established are an integral part of prototyping and biochip operation, whereby testing occurs *after* the chip component assembly to assess *operation*.

This new capability provides the high-quality and reliable technical specifications necessary for Archer's future patent applications. The establishment of semiconductor chip testing allows Archer to reach a number of biochip development milestones, including the fabrication of graphene transistors and their operation at the limits of what can be achieved technologically.

Archer's technologies are complementary; the Company is developing advanced chips in the same semiconductor fabrication environment. Importantly, the chip testing workstations can also be configured to test chip devices relevant to the Company's ¹²CQ quantum computing qubit processor development.

Commenting on Archer's latest chip development, Archer CEO Dr Mohammad Choucair said: "The establishment of in-house semiconductor chip testing and measurement is a key operational requirement that is necessary to build our technology.

"This will allow the Company to meet a number of milestones in the development of multiple chip types, including its biochip and also quantum computing chip."

About Archer and its biochip technology

Archer is a technology company that builds advanced semiconductor devices, including 'labs-on-a-chip' that integrate biosensors relevant to point-of-care medical diagnostics. Archer's biochip is a unique graphene-based biotechnology that the Company is building to enable the complex detection of some of the world's most deadly communicable diseases.

For more information, please view Archer's [corporate presentation](#).

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

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