

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

2 November 2023

Archer demonstrates multiplexing readout for its advanced Biochip gFET

Highlights

- Archer Materials has demonstrated multiplexing readout for its Biochip by integrating its advanced gFET sensors with newly developed hardware and software that analyse multiple liquid samples on a chip at once.
 - Archer will apply the single-chip multiplexing capability to biologically relevant molecules, which will potentially enable end-users to detect multiple diseases from one single chip.
 - The Biochip designs and devices form the basis of intellectual property that is 100% owned by Archer.
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Archer Materials Limited (“Archer”, the “Company”, “ASX: AXE”), a semiconductor company advancing the quantum computing and medical diagnostics industries, has demonstrated multiplexing readout for its advanced Biochip graphene field effect transistor (“gFET”) device.

Archer confirmed single-device multiplexing using four advanced gFETs as sensors, which were integrated into the Archer advanced Biochip platform that was announced on 14 September 2023. This is significant as Archer intends to apply its multiplexing capability in the Biochip to test for multiple diseases on a single chip at once.

Archer designed and developed the new hardware and software systems to readout the signal from the four advanced gFET sensors at once on a single chip. This is a significant advance over the earlier generation of the Biochip system (announced on 16 November 2022), which could only activate one-sensor-at-a-time.

The new Biochip system with multiplexing capability also provides automated hands-free operation, as it integrates liquid handling automation and data acquisition. The software developed by Archer can display all single and time series measurements in real-time for the four gFET sensors simultaneously.

Commenting on the demonstration of multiplexing readout, Dr Mohammad Choucair, CEO of Archer, said,

“Archer is now able to demonstrate readout, or a signal, from multiple graphene sensors and liquid samples coming from the Biochip, which is a step-change in advancing towards the potential to sense multiple disease samples at once, on a single chip.

“The progress made by the Archer team to demonstrate multiplex detection, and the support of our commercial foundry partners in the manufacture of Archer’s Biochip devices, will be applied towards the function and operation of the Biochip in targeting biologically relevant molecules.

“Moving testing for diseases from the lab onto a chip has the potential to create better access to healthcare to those who might not have it and can therefore help improve patient outcomes.”

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

Tristan Everett
+61 403 789 096
tristan.everett@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