
Archer Materials Achieves Wettable Graphene Transistor for Biochip Tech

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Australian chipmaker Archer Materials Limited has developed a graphene-based field effect transistor (gFET) capable of operating in wet environments.

The latest innovation achieves the [ASX-listed company](#)'s long-term biochip technology development goal.

The biochip innovation will be integrated with advanced microfluidic systems to allow the manufacturing of mini lab-on-a-chip device platforms designed for medical diagnostics, Archer said in an ASX announcement.

The gFET device is the biochip sensing component that will be used for digitising biologically relevant signals, like those from viruses or bacteria.

The company explained that the integration of gFETs with on-chip microfluidics potentially enables multiplexing, such as the ability to parallelise the detection of multiple biologically relevant targets in droplet-size liquid samples on a chip.

The innovation will prevent liquids from shorting the integrated circuit, while simultaneously obtaining electronic signals using the liquid as part of the device.

"The Archer team has developed a graphene-based transistor, an electronic device, that importantly for biological applications works in liquids. The transistor consists of a single-atom-thick sheet of graphene to act as an ultrasensitive sensor intended to operate alongside other bio-functional regions fabricated on the same miniaturised chip," said Archer CEO

Mohammad Choucair.

“The work is an exciting development towards realising an operational biochip technology at Archer,” he added.

Read the [original article](#) on Australian Manufacturing.