ACN: 123 993 233

ASX Announcement (ASX:**AXE**) 17 January 2019

Appointment of quantum technology manager

Highlights

- Dr Martin Fuechsle has accepted the role of Manager, Quantum Technology (Appointment), to lead Archer's value-add technology development in the key vertical of Quantum Technology.
- Dr Fuechsle is internationally recognised for developing the smallest transistor, a "single-atom transistor", and the fabrication of breakthrough quantum computing devices[1,2]; pioneering achievements that strongly align to Archer's technology development applications in the global semiconductor and quantum computing industries[3,4].
- The Appointment will allow Archer to begin developing exclusively licenced intellectual property from the University of Sydney, related to a practical quantum computing device (chip) based on room-temperature quantum information processing[5].
- Archer intends to commercialise its quantum technology through licencing and direct sales channels.

Archer Exploration Limited (Archer, Company) is pleased to announce that the Company has appointed Dr Martin Fuechsle to the position of Manager, Quantum Technology, (Appointment). Dr Fuechsle's appointment to this newly created role is part of Archer's strategy to commercially develop materials and technology in the key vertical of Quantum Technology.

Commenting on the Appointment, Archer CEO Dr Mohammad Choucair said, "Dr Fuechsle is among the few highly talented physicists in the world capable of building quantum devices that push the boundaries of current information processing technology. His skills, experience, and exceptional track record strongly align to Archer's requirements for developing our key vertical of Quantum Technology, and we look forward to working with him to expand our team and capabilities".

The Appointment

The Appointment will commence 11 February 2019, is full-time, and based in Archer's Sydney CBD Office reporting directly to Archer's CEO. The immediate priority of the Appointment is to technically develop the intellectual property claims in patents which Archer holds exclusive commercial rights to (ASX Announcement 12 December 2018), related to room-temperature quantum computing materials and technology[5]. This will involve applying best practices in the areas of quantum technology, specifically in quantum computing, materials, and spintronics, while advancing Archer's strategic network in the semiconductor and quantum computing industry.

Dr Martin Fuechsle

Dr Fuechsle brings more than 10 years' experience in successfully designing, fabricating, and integrating quantum devices. Between 2011 and 2014, he held a research position at the Centre for Quantum Computation & Communication Technology (CQC^{2}T) at the University of New South Wales (UNSW), Sydney, which is headed by Prof Michelle Simmons, the 2018 Australian of the Year. There he built quantum computing devices and the world's smallest single-atom transistor. From 2015-2017, he held a research position as part of the Rio Tinto VK Technologies research group at the University of Western Australia, Perth, developing new geological survey instrumentation.

He received a PhD in Experimental Physics in 2011 from UNSW, having completed his BSc and MA in Physics at the University of Regensburg, Germany. In 2008 he was a member of the Australian delegation at the Lindau Meeting of Nobel Laureates, and in 2013, he was awarded the Australian Institute of Physics Bragg Gold Medal for the most outstanding Physics PhD in Australia. Dr Fuechsle's pioneering work has been recognised internationally and published in peer reviewed scientific journals which rank in the top 1% in the field internationally[1,2] that continue to be highly cited.

Next Steps:

Dr Fuechsle will start the technical development aspects of building the quantum computing chip that Archer has international and exclusive rights to develop and commercialise (see Background and Market Summary below). To expedite technical and commercial milestones, Archer intends to partner and collaborate with infrastructure providers, software developers, manufacturers, and distributors in the semiconductor and quantum computing industry.

- Ends -

Background and Market Summary:

Archer and the University of Sydney Commercial Development and Industry Partnerships (CDIP) executed an exclusive licence agreement (ASX Announcement 12 December 2018) that allows Archer to develop and commercialise room-temperature quantum computing technology (Licenced IP). The technology is a device (chip) capable of quantum information processing at room-temperature, and the materials that form the critical componentry of the chip are available in the inventory of Archer's wholly owned subsidiary Carbon Allotropes.

During his previous employment at the University of Sydney (University), Archer CEO Dr Mohammad Choucair invented the first material known to overcome both the limitations of sub-zero operating temperatures and electronic device integration for qubits. The conducting carbon material was able to process qubits at room temperature. This has the potential to reduce the commercial barriers to quantum computing and make it globally accessible. The patented device incorporating the carbon material forms the subject of the Licenced IP.

Successful development of the technology would represent a major global breakthrough in the quantum computing industry, estimated to reach $US29 billion by 2021[6] and linked to the $US500 billion semiconductor market[3], catalysed by technical advances that allow for practicality, accessibility, and wide-spread consumer adoption[4]. Patents protecting the Licenced IP have been filed internationally to cover Europe, Australia, United States of America, Japan, Hong Kong, Republic of Korea, and China.

The University is responsible for prosecuting and maintaining registration of the patents related to the Licenced IP. The prosecution of the patents in various countries and regions will allow Archer the commercial freedom to operate and market entry to the US, Europe and Australasia. Archer intends to commercialise the quantum technology through licencing and direct sales channels.

About Archer

Archer provides shareholders exposure to innovative technologies and the advanced materials that underpin them. The Company has a focused strategy targeting globally relevant advanced materials markets of human health, reliable energy, and quantum technology. Archer is well positioned to execute on its strategy.

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Shareholders

For more information about Archer's activities, please visit our:

Website:
https://archerx.com.au/

Twitter:
https://twitter.com/archerxau?lang=en

YouTube:
https://www.youtube.com/watch?v=WZjLG7SrLK8

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