# ARCHER

**Title:** Quantum Hardware Engineer (Devices)
**Salary:** $110,000 – 130,000 p.a. plus super contribution of 10%

**Department:** Quantum Technology

**Location:** Sydney, Australia
**Type:** Full time

## Summary

Quantum hardware development that requires a post PhD with a strong background in experimental quantum physics, particularly in solid-state device fabrication and qubit control measurements.

## About Us

Archer Materials Limited is an ASX listed technology company that builds advanced semiconductor devices, including processor chips relevant to quantum computing.

We create disruptive deep tech to address complex global challenges.

Archer is developing a novel quantum computing processor chip for practical applications in mobile technology. As a member of the IBM Quantum Network, Archer is one of only a few companies globally commercialising quantum computing processor hardware.

## The Role

As part of Archer's growing quantum technology team, you will be working at state-of-the-art research facilities in Sydney and with national and international industry and research partners. Your work will focus on the electronic read-out of quantum information in spin-based solid-state devices.

You will be working directly with inventors of innovative technology, with a focus on quantum information read-out in solid-state devices. You will bring a strong technical background in experimental quantum physics, and an exceptional track record in delivering world-class outcomes in the fabrication and measurement of spin-based quantum devices.

## Responsibilities

- Design and fabrication of nanoelectronic spin-readout devices as part of the implementation of Archer's commercialisation plans.
- Participate in the development of intellectual property in-line with agreed strategy and policies.
- Work closely with Archer team members and key external stakeholders in the collaborative development of quantum hardware.
- Communicate technology development outcomes through several publication channels including scientific reporting and publication in high-impact journals and patent applications.
- Grow Archer's strategic network in the field of quantum computing technology.
- Contribute to applications for relevant project funding.
- Report, document, and assess completed technology development milestones.

**Required Skills, Experience & Qualifications**

- PhD in experimental quantum physics, nanoelectronic engineering or similar.
- Experience working in semiconductor-grade cleanroom environments.
- Experience in design and fabrication of nanoelectronic structures using electron beam/UV lithography.
- Proven knowledge and expertise in spin-based quantum devices, including spin read-out and spin control.
- Experience with electron spin resonance (ESR) and/or nuclear magnetic resonance (NMR) measurements and devices.
- Proven record of producing high-quality research outcomes in an academic or industrial setting.
- Keen interest in building quantum devices for real-world applications.
- Familiarity with quantum computing hardware, quantum simulators, or quantum sensors.

**Desired skills and experience**

- Supervisory and/or leadership experience in scientific R&D settings.
- Implementation of nano-positioning methods, tools and instrumentation.
- Programming arbitrary waveform generators (AWGs).
- Use of quantum simulation software e.g. QuTiP, Qiskit.
- Interest in developing hardware solutions for coherent quantum control in solid-state devices.
- Motivated to join a productive team of pioneering scientists and engineers.

**END OF POSITION DESCRIPTION**