# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Quantum Measurement Scientist |
| Job Reference | 95237 |
| Tenure | IndefiniteFull time |
| Salary Range | AU$105,806 – AU$114,500 per annum plus up to 15.4% superannuation |
| Location(s) | Lindfield, NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian Citizens Only |
| Position reports to the | Team Leader – Quantum Devices |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Emma Mitchell via emma.mitchell@csiro.au or phone +61 2 9413 7749 |
| How to apply | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**If you experience difficulties when applying, please email careers.online@csiro.au or call 1300 984 220. |

### Acknowledgement of Country

CSIRO acknowledges the Traditional Owners of the land, sea, and waters, of the area that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. They may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist Staff will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership, and pursue new ideas and approaches that create new concepts.

The Quantum Devices team uses CSIRO’s world-leading scientific capability in High Temperature Superconducting (HTS) electronic devices, circuits, and sensors to develop advanced magnetometry. The Quantum Measurement Scientist in this position will measure and characterise the electrical and magnetic properties of superconducting devices.

### Duties and Key Result Areas

The Quantum Measurement Scientist will be responsible for the analysis and improvement of superconducting quantum sensors in various CSIRO research projects. Duties include but are not limited to:

* Measure electrical and magnetic characteristics of sensors, including quantum electronics.
* Apply theoretical physics in conducting low-noise, cryogenic experiments on superconducting devices.
* Develop new measurement techniques and methods and analyse results.
* Collate, analyse and interpret measurements using statistical analysis.
* Develop data fitting procedures and write code to analyse data where needed.
* Contribute to the improvement and development of measurement capability.
* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing and further research.
* Select the most profitable line of attack upon a problem and prepare experimental protocols.
* Present results in a meaningful format for incorporation into reports and/or publications.
* Communicate openly, effectively, and respectfully with all staff, clients, and suppliers in the interests of good business practice, collaboration, and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD, or an equivalent combination of qualifications and research (i.e., master’s degree and relevant laboratory experience), in a field such as Physics or Engineering.
2. Demonstrated experience in undertaking laboratory measurements using electrical characterisation equipment and knowledge of the experimental considerations of electromagnetic and quantum sensing measurements.
3. A sound knowledge of theoretical physics preferably superconductivity and/or condensed matter physics and the ability to creatively apply this to the measurement of superconducting or quantum-based sensors.
4. Familiarity with scientific programming for data analysis and hardware interfacing (specific language is not critical).
5. Demonstrated capability in planning, organising, and manipulating experimental data including statistical and fitting techniques.
6. A demonstrated publication history of lead authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications with strong writing skills.
7. Ability to obtain and maintain a security clearance which requires Australian Citizenship.

## **Desirable**

1. Demonstrated cryogenic experimental measurement skills.
2. Interest in developing other quantum-based sensors for applications.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of change.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* The successful candidate will be required to obtain and maintain a **Negative Vetting Level 2** Australian Government security clearance.

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We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

CSIRO is a values-based organisation. In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* 1. People First
	2. Further Together
	3. Making it Real
	4. Trusted

Find out more about CSIRO [Manufacturing](https://www.csiro.au/en/Research/MF)