# Position Details

## Research Projects- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Nanoscale Sensor Fabrication Experimentalist |
| Job Reference | 88007 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$102,724 – AU$111,165 per annum plus up to 15.4% superannuation |
| Location(s) | Lindfield (Sydney), 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 Device Fabrication |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Scott Martin via email at [scott.martin@csiro.au](mailto:scott.martin@csiro.au) or phone +61 2 9413 7746 |
| 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](mailto: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 areas 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).

### Role Overview

The role of Research Projects staff in CSIRO is to collaborate in scientific and technological activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental, observational or technology development work, and in carrying out the more practical aspects of the work.

The Nanoscale Sensor Fabrication Experimentalist will be responsible for the development and performing of routines and processes to fabricate devices. As a team player with an in-depth understanding of Complementary Metal Oxide Semiconductor (CMOS) device fabrication, they will spend a significant portion of their day in a cleanroom environment, as well as collaborating daily with a diverse, multi-disciplinary group of scientists, engineers, and technical team members.

The Quantum Devices & Materials team uses CSIRO’s world-leading scientific capability in High Temperature Superconducting (HTS) electronic devices, circuits, and sensors to develop advanced magnetometry. The Nanoscale Sensor Fabrication Experimentalist will develop systems or devices related to superconducting sensors.

### Duties and Key Result Areas

* Design and fabricate superconductor devices and contribute to device protocol development based on your knowledge of semiconductors.
* Contribute to the improvement and development of the fabrication capability.
* Use of knowledge in thin film material properties including optical, electrical, mechanical to optimise sensor performance.
* Collation, analysis, and interpretation of measurements using statistical analysis.
* Incorporate new approaches to scientific investigations by adapting original concepts and ideas for new, existing, and further research.
* Electrical and magnetic characterisation cryogenic measurements of experimental devices.
* Provide supervision and coaching to students and technical staff as required.
* Publish research results in external peer-reviewed scientific journals and participate in international conferences.
* 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.
* 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.
* Work collaboratively as part of a multi-disciplinary research team to carry out tasks in support of CSIRO’s scientific objectives.
* Perform other duties as assigned.

## **Selection Criteria**

#### Essential

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

1. Minimum qualification of Master’s degree, and demonstrated research/industry experience in a relevant field such as physics or engineering.
2. Experience in sensor nanofabrication, and in generating and pursuing novel ideas and solutions to scientific research problems.
3. A sound knowledge of materials science and device physics.
4. Demonstrated experience in undertaking laboratory measurements using electrical characterisation equipment.
5. Demonstrated capability in planning, organising, and manipulating experimental data including statistical and fitting techniques.
6. Ability to obtain and maintain a security clearance which requires Australian Citizenship.

## **Desirable**

1. Electrical and magnetic characterisation cryogenic measurements of experimental devices.
2. Demonstrated programming skills for control electronics and/or data analysis, in C++, Matlab, Python or similar.
3. Experience with fabrication of high temperature superconducting materials to develop quantum sensors.
4. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent 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 team 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:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response 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 changes.

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 Clearance or equivalent. Please note that individuals 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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  2. Further Together
  3. Making it Real
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