# Position Details

## Research Scientist/Engineer- CSOF6

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| The following information is for applicants | |
| Advertised Job Title | Two-dimensional (2D) Quantum Device Physicist |
| Job Reference | 80461 |
| Tenure | Indefinite  Full-time or Part-time (minimum 0.8 FTE) or Job share basis (if circumstances permit) |
| Salary Range | AU$117,917 to AU$138,176 pa (pro-rata for part-time) + 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/New Zealand Citizens and Australian Permanent Residents Only |
| Position reports to the | Team Leader – Graphene Materials and Devices |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact:  Katie Green via email at [katie.green@csiro.au](mailto:katie.green@csiro.au) or phone +61 2 9413 7522 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 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).

### Role Overview

The role of Research Scientist/Engineer Staff in CSIRO is to conduct innovative research/engineering leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You 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 2D Quantum Device Physicist will develop sensors and/or devices for emerging areas in quantum technologies. To achieve this, the Scientist will design and explore synthesis and fabrication processes to manipulate and control the quantum properties of 2D materials. This will include including characterisation, testing and measurement of materials, sensors, and devices.

The role is offered on a full-time, part-time (minimum 0.8 FTE) or job share basis (if circumstances permit).

### Duties and Key Result Areas:

* Develop high quality 2D materials appropriate for quantum applications using CSIRO and non-CSIRO developed processes.
* Conceptualise and design 2D material devices for research and commercial projects related to quantum technologies.
* Utilise a suite of plasma-based deposition instruments in a clean room to fabricate quantum sensors and devices.
* Measure, test and characterise quantum materials, devices, and sensors.
* Collaborate with research partners (academia and industry) to develop novel quantum solutions to emerging problems
* By providing specialist advice, assist the development of quantum technology projects and infrastructure at CSIRO
* Within broad guidelines, use professional expertise, knowledge of other disciplines and research experience/achievement to formulate, develop and complete an approved research program with general direction as to the aims of their activities.
* Communicate research results to clients and the scientific community through oral and written reports, which may include the preparation of documents for patent applications.
* Provide advice to policy makers and inform and transfer knowledge to non-scientific audiences.
* Lead and supervise staff to ensure that experiments are established in accordance with the research design and are completed within the agree timeframes and budget.
* Undertake feasibility studies, demonstrating a considerable degree of originality, creativity, and innovation in solving problems and introducing new directions and approaches.
* 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, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

## **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:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **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:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Demonstrates flexibility in thinking and adapts to, and manages, the increasing rate of organisational change by adjusting strategies, goal and priorities.

## **Selection Criteria**

#### Essential

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

1. A PhD and five years of experience (or an equivalent combination of qualifications and research experience) in a relevant field such as Physics, Quantum Engineering or Nanotechnology.
2. Demonstrated ability to develop and then characterise 2D materials.
3. Experience in the fabrication of devices and engineered systems using 2D materials in a clean room environment.
4. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
5. High level written and oral communication skills with ability to represent the research team at conferences and workshops.
6. A sound history of publication in peer-reviewed journals and authorship of technical reports, grant applications and patents.
7. A history of professional and respectful behaviours and attitudes in a collaborative environment.

## **Desirable:**

1. Experience in graphene electronics.
2. Experience in micro- and/or nano- device fabrication.
3. Experience or knowledge of any quantum sensors/devices.

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.

## **About CSIRO:**

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)