# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist/Engineer in Optical Systems |
| Job Reference: | 61836 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | [ ]  Australian Citizens Only[x]  Australian/New Zealand Citizens and Australian Permanent Residents Only* [ ]  All Candidates
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| Percentage of Client Focus - Internal: | 80% |
| Percentage of Client Focus - External: | 20% |
| Reports to the: | Optical Systems Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries  | Dr David Farrant via email: david.farrant@csiro.au *Please do not email your application directly to Dr Farrant. Applications received via this method may not be considered by the selection panel.* |
| Contact Details For Applying | Call 1300 984 220 or email careers.online@csiro.au.  |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon  |

## 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. 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 Research Scientist/Engineer in Optical Systems will work as part of a multidisciplinary research team in the Manufacturing Business Unit and will also collaborate with other CSIRO groups and external stakeholders. The scientist will undertake research, design and development of optical systems for use in a range of scientific and industrial measurement applications. This research will include optical, photonic and terahertz systems encompassing imaging, spectroscopy and interferometry.

## Duties and Key Result Areas:

* Develop innovative optical and terahertz techniques to solve measurement problems in imaging, spectroscopy and interferometry.
* Design, construct and test optical and terahertz experiments and prototypes in collaboration with team members.
* Develop numerical and/or computational models of optical and terahertz systems to predict performance and optimise designs.
* Collect and analyse measurement results, compare with theory and use this to validate designs and to develop new and improved systems and techniques.
* Present and document results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Undertake in experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design, or as required.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* 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 plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **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.**
6. **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.

## Essential Criteria:

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

1. A PhD degree (or equivalent research experience) in a relevant discipline such as physics or engineering coupled with relevant research experience.
2. Demonstrated theoretical and practical knowledge of optical physics, lasers, detectors and modulators.
3. Demonstrated experience in optics/photonics modelling and design knowledge.
4. Demonstrated experience in the planning, constructing, conducting and analysis of optical experiments.
5. **Strong written and oral communication skills with the ability to represent the research team effectively internally and externally.**
6. Demonstrated capacity to lead a project and/or team.
7. **A sound history of publication in peer-reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.**
8. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
9. **A history of professional and respectful behaviours and attitudes in a collaborative environment.**

## Desirable Criteria:

1. Optical modelling software skills (e.g. Zemax).
2. Software skills including software control of instrumentation (e.g. LabVIEW, Python, Matlab).
3. Electronics skills including assembly, testing and diagnostics.

## Special Requirements:

The successful applicant will be required to consent to a National Police Check.

Appointment to this role may also be subject to additional conditions including security/national police/medical/character clearance requirements.

## About CSIRO:

We imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

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