# Position Details

## Research Projects- CSOF4

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| The following information is for applicants |
| Advertised Job Title | Magnetic Resonance Scientist |
| Job Reference | 80475 |
| Tenure | Specified Term of 3 Years Full-time  |
| Salary Range | AU$87,068 to AU$98,504 pa + up to 15.4% superannuation |
| Location(s) | Lucas Heights, Sydney, 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
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| Position reports to the | Team Leader – Magnetic Resonance Development |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Richard Yong via email at richard.yong@csiro.au or phone +61 2 9710 6702 |
| 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. |

### Role Overview

We are looking to appoint a scientist within CSIRO Mineral Resources’ Magnetic Resonance Development Team, at our Lucas Heights laboratory located in southern Sydney. We are a team of physicists and engineers who develop novel magnetic resonance (MR)-based on-line instruments to solve a range of challenging, real-world measurement problems in the mining and security industry. We test design ideas in the lab, prototype working concepts, and develop commercial analysers that are deployed in field applications.

Applicants will require an Honours (or Masters) degree, or equivalent industry experience, in physics, or other physical sciences or engineering disciplines with a strong focus on experimental science. A background in experimental physical sciences is strongly desired as the role will predominantly involve laboratory hands-on work, focussing on the development of novel radio frequency sensors and methods using magnetic resonance. Hence, applicants with a strong, practical, working knowledge of any spectroscopy are encouraged to apply. The successful applicant will work in a team environment to complete research tasks as part of the development of MR sensors for minerals industry applications. These tasks will include:

* Appropriating existing experimental methods, and creating new ones, to measure minerals using MR or other spectroscopies.
* Using skills in radiofrequency measurement and analysis, such as assembly and design of radiofrequency circuits, to create new methods to measure minerals.
* Using their experimental physics to prototype and develop novel analysers to detect minerals.
* Managing scientific projects with industrial clients.
* Assessing prototypes in field trials at mineral plants.

The position offers considerable variety, tackling scientific, engineering, and logistical challenges. The successful applicant is encouraged to develop their own skills and expertise to contribute to existing projects and to contribute to new capability development in the MR research area. Such areas currently include low-field NMR and high-power radiofrequency techniques. The position would ideally suit a person with excellent experimental skills, interested in working in developing ideas to move from the laboratory to industry applications. Significant work will also involve planning experiments and operating MR systems in the laboratory.

### Duties and Key Result Areas:

* Under the supervision of more senior researchers, carry out research investigations, requiring originality, creativity and innovation.
* Appropriate existing experimental methods, and creating new ones, to measure minerals or other materials using magnetic resonance or other spectroscopies.
* Use knowledge in experimental physics to prototype and develop novel analysers.
* Manage scientific projects.
* In collaboration with the team, develop spectrometers into products for commercialisation.
* Test these products in industrial situations and adapt the technology as required.
* Develop experimental programs for and operating CSIRO custom-built magnetic resonance spectrometers.
* Collect data, analysis and interpretation of data and report writing.
* Design and prototype industrial spectrometers.
* Use computer modelling to validate experimental results.
* Use and understand electromagnetic and solid-state physics models to explain experimental data.
* Take part in technology field trials in Australia and overseas.
* Maintain confidentiality when dealing with commercially sensitive information.
* 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, regionally dispersed 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.

## **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 response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **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.

## **Selection Criteria**

#### Essential

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

1. Either:
	1. An Honours (or Masters) degree (or equivalent industry experience) in physics, physical sciences, or engineering with 2-3 years of post-degree experience, or
	2. A Ph.D. in physics, physical sciences, or engineering, with no additional experience required.
2. A demonstrated ability to independently drive and deliver research outcomes.
3. Excellent experimental and measurement skills and an expert-level understanding of a spectroscopy.
4. Good communication and interpersonal skills, including working constructively with research scientists, engineers, support staff and/or client personnel.
5. Interest in applying scientific problem solving and research to solve practical problems in industry.
6. Competency with scientific computing packages or other programming languages.
7. Willing and able to travel within Australia and overseas for periods of 2-4 weeks at a time, and to participate in field trials in remote locations (COVID-19-permitting).

## **Desirable:**

1. A Ph.D. (or equivalent industry experience) in physics, or physical sciences or engineering.
2. Experience with magnetic resonance spectroscopy.
3. Experience in radiofrequency physics/engineering.
4. General electronics knowledge

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 security clearance at the ANSTO site.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- https://ielts.com.au/
* From 17 January 2022 CSIRO staff members and Other Personnel are required to be fully vaccinated with a COVID-19 Vaccine as a condition of entry to an CSIRO occupied site.  The successful candidate will be required to provide relevant Vaccination Information to the line manager.

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* People First
* Further Together
* Making it Real
* Trusted

Find out more about CSIRO [Mineral Resources](https://www.csiro.au/en/Research/MRF)