# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist/Engineer in Magnetic Resonance Applications |
| Job Reference | 74841 |
| Tenure | Specified Term of 3 years  |
| Salary Range | AU$100k - AU$108k per annum (pro-rata for part-time) plus 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
* Australian Permanent Residents
* All Candidates that either hold or able to obtain a valid working visa, with full working rights, for the duration of the position’s term.
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| Position reports to the | Magnetic Resonance Development Group Leader |
| Client Focus – Internal | 60% |
| Client Focus – External | 40% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Peter Coghill via email at Peter.Coghill@csiro.au |
| 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

### The Research Scientist/Engineer in Magnetic Resonance Applications role will be part of the CSIRO Mineral Resources’ Magnetic Resonance Development Team. The team is currently active in the development and commercialisation of magnetic resonance (MR) systems for the on-line measurement of bulk ores and for security applications.

### The position will conduct innovative magnetic resonance research to develop novel MR or RF based on-line instruments to solve a range of challenging, real-world problems in the mining, security and other industries. You will have the opportunity to build and maintain networks, play a role in securing project funds, provide scientific leadership and pursue new ideas and approaches. The successful applicant will work in a team environment to develop and complete research tasks as part of the development of magnetic resonance sensors for industry applications.

### Duties and Key Result Areas

* Under the supervision of more senior researchers, assist in the planning and preparation of research proposals and 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 of solid-state and experimental physics to prototype and develop novel analysers.
* Manage and formulate 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.
* Interact with clients and stakeholders to forward project objectives.
* 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:** 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.

## **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 experience) in a relevant field such as physics, or physical sciences or engineering.
2. Demonstrated excellent experimental skills, preferably in spectroscopic or electromagnetic techniques.
3. Sound theoretical understanding of physics concepts particularly in the areas or electromagnetism and solid-state physics
4. Demonstrated ability to undertake original, creative and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
5. Good communication and interpersonal skills, including working constructively with research scientists, engineers, support staff and/or client personnel.
6. Interest in applying scientific problem solving and research to solve practical problems in industry.
7. Competency with scientific computing packages or other programming languages.
8. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications

## **Desirable**

1. Post-doctoral experience or industry experience within a relevant science field, such as commercial MRI or similar.
2. Experience with magnetic resonance spectroscopy.
3. Experience in radiofrequency physics/engineering.
4. General electronics knowledge.
5. Experience with industrial research or applied research with defined goals.

**Special 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.

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/>)

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).

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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)