# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants |
| Advertised Job Title  | CSIRO Postdoctoral Fellowship in Chemical Engineering or Electrochemistry |
| Job Reference | 94916 |
| Tenure | Specified Term of 3 years Full-time  |
| Salary Range | AU$92,624 to AU$101,459 pa (pro-rata for part time)plus up to 15.4% superannuation |
| Location(s) | Pullenvale, Queensland |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 1 |
| Enquire about this job | Contact Yonggang Jin via email at yonggang.jin@csiro.au or phone +61 73327 4146 |
| 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. |

### 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).

### Child Safety

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

Future Science Platforms (FSPs) represent an investment in science that underpins innovation and can help reinvent and create new industries for Australia.

Nationally and internationally, reaching net-zero emissions and beyond will require new methods of permanently removing significant amounts of carbon from the atmosphere that are fast, scalable, and responsible. CarbonLock, CSIRO’s Permanent Carbon Locking Future Science Platform (FSP) will address this challenge by driving radical innovation at the nexus of biology, chemistry and engineering in negative emissions technology and their integration to permanently remove atmospheric carbon dioxide in novel and unconventional ways.

**CSIRO Early Research Career (CERC) Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant research experience. These Fellowships aim to develop the next generation of future leaders of the innovation system through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system;
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence;
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition; and
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

CERC Fellows **are appointed for three years full time.**

**Project Description**

The CERC Fellow will join a multidisciplinary Environment and Sustainability Research Team that is conducting diverse research & development activities in emissions abatement, water treatment, dust control and waste management. The team's goal is to lower emissions, reduce environmental impacts and contribute to achieving sustainable mineral resources through innovative science and technology.

Specific to this role, the CERC Fellow will work collaboratively with the CarbonLock FSP to participate in the team’s research projects in the areas of mineral carbonation and waste management. The mining industry has major sustainability challenges with emissions reduction and effective management of the large volumes of tailings and waste produced by its activities. The involved research aims to develop novel electrochemical processes to accelerate CO2 mineralisation of mine tailings, incorporating the utilisation of mine wastewater and recovery of value metals form mine waste.

### Duties and Key Result Areas

Under the direction of senior research scientists and engineers, this CERC Fellow will:

* + Develop electrochemical processes for accelerated mineral carbonation and concurrent reaction pathways for value metals recovery.
	+ Study fundamental electrochemical reactions and interfacial chemistry for mineral dissolution and carbonation, and metal leaching and enrichment.
	+ Carry out laboratory experiments including electrochemical tests and characterisation, materials characterisation and setting up experimental rigs.
	+ Present results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
	+ Carry out research investigations requiring originality, creativity and innovation.
	+ Proactively undertake development to grow effective researcher capabilities to support career goals.
	+ Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Other duties as directed.

The CERC Fellow learning, development and training programis developed between the CERC Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellow’s capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

## **Selection Criteria**

#### Essential

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

1. A doctorate (or will shortly satisfy the requirements of a PhD). The doctorate must be in a relevant discipline area, such as Chemical Engineering and Electrochemistry. Please note: To be eligible for this role you must have no more than 3 years of relevant research experience.
2. Fundament knowledge in electrochemistry, electrocatalysis and chemical reactions.
3. Proven experience and skills in electrochemical experiments, electrochemical tests and characterisation, and setting up and operating electrochemical testing cells.
4. Demonstrated experience and skills in materials synthesis and characterisation.
5. High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences.
6. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
7. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable**

1. Hydrometallurgy operation and techniques.
2. Knowledge of minerals composition and structures.
3. Experience in Aspen process simulation.

## **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.

To be appointed as a CERC Fellow within CSIRO, candidates are required to have **submitted** their doctoral thesis at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 ($89,680). Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will undertake a pre-employment background check. 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/

**Our value proposition**

We want CERC Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

Find out more about our CSIRO Early Research Career (CERC) Fellow Experience Employee Value Proposition (EVP) [here](https://www.csiro.au/postdoctoral-fellowships).

## **About CSIRO**

We solve the greatest challenges through innovative science and technology.

To find out more about the CarbonLock FSP, please visit [our website](https://research.csiro.au/carbonlock/). To learn more about CSIRO, visit [CSIRO Online](http://www.csiro.au/) for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real