# 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 sodium-ion batteries |
| Job Reference | 95824 |
| Tenure | Specified Term of 3 years Full-time or Part-time hours |
| Salary Range | AU$89,926 to AU$98,504 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Clayton, VIC  |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens;
* Australian Permanent Residents; and
* Australian temporary residents currently residing in Australia who hold an existing valid visa with unrestricted work rights for the duration of the term (until at least until mid-2027)
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| Position reports to the | Team Leader, Battery Materials and Design   |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dr Tony Hollenkamp via email at tony.hollenkamp@csiro.au or phone +61 3 9545 8903  |
| 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

**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 or part time equivalent.**

The role of CERC Postdoctoral Fellow in CSIRO is to collaborate in scientific and technological activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental, observational or technology development work, and in carrying out the more practical aspects of the work.

CSIRO Manufacturing is developing deeper expertise in cathode synthesis and production, in particular for sodium-ion batteries, to support the development of opportunities for Australian industry. The Battery Materials and Design (BMD) Team is seeking a motivated, enthusiastic Postdoctoral Fellow who has broad knowledge of a variety of cathode materials and particular experience in the synthesis and characterisation of materials designed for sodium-ion batteries. The research activity will focus on the synthesis of specific cathode materials and how the choice of pre-cursor starting materials affects the resulting properties, based on evaluations of structural, physico-chemical, and electrochemical performance of the materials produced. Feedback from the latter will guide the development of optimized synthesis parameters for each candidate cathode material.

The CERC Fellow will be involved in day-to-day laboratory work where tasks include (but are not limited to): synthesising cathode materials, preparing electrode coatings, characterising materials using a range of different techniques and reporting the results at regular team meetings. The Fellow will accurately record experiments and maintain quality records to be able to identify problems and triage issues as they occur. Strong communication skills are needed, both oral and written, to provide updates both within the team and more broadly. A strong commitment to Health, Safety and Environment (HSE) is also required.

### Duties and Key Result Areas

* Conducting synthesis of a range of sodium-ion cathode materials.
* Conducting physicochemical characterisation of the materials.
* Performing device fabrication, as coin-cells and in three-electrode cells.
* Evaluating cathode performance through coin-cell testing and reporting of the results.
* Identifying pre- and post-service characterisation of materials and battery cells to identify problems and propose potential solutions.
* Maintaining accurate and up-to-date records for track and tracing purposes.
* Joining the regular project meetings.
* Contributing to accurate reports for internal and external clients.
* Participating in updating the safety documents such as SWI’s as appropriate and keeping the lab safe.
* Contributing to the regular maintenance of laboratory equipment and facilities which you and the team use.
* Being able to work independently, as well as collaboratively within the team environment, to deliver tasks in timely manner to internal and external stakeholders.
* 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.
* Design new processes or apparatus by adapting existing techniques and components to meet special circumstances or undertake modifications to methods requiring some innovation.
* 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.
* Other duties as directed.

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

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
	+ Recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research
	+ Utilise design thinking methodology to plan and prepare research proposals, and apply non-academic impact methodology to research projects
	+ Carry out research investigations requiring originality, creativity and innovation
	+ Record, manage, and analyse data/information using relevant domain data science techniques.
	+ 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 Chemistry, Physics, Materials Science or Materials Engineering.

Please note: To be eligible for this role you must have **no more than 3 years** (or part time equivalent) of relevant research experience.

1. Demonstrable experience in the synthesis and characterisation of sodium-ion battery cathode materials.
2. Deep understanding of the relationships between composition, processing, and performance for sodium-ion or lithium-ion cathode materials.
3. Expertise in the use of gloveboxes and battery testing equipment.
4. Computer literacy and familiarity with MS Office Applications as well as other graphing packages such as Origin.
5. Demonstrated track record of working collaboratively within a team to achieve results.
6. Able to prioritise and manage time effectively.
7. 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.
8. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
9. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable**

1. Demonstrated proficiency in the use of X-ray characterization techniques, including powder diffraction analysis, photoelectron spectroscopy, fluorescence analysis.
2. Demonstrated proficiency in the use of electron beam characterization techniques, including scanning electron microscopies, X-ray spectrometries, electron diffraction.
3. Demonstrated proficiency in the use of analytical/characterization techniques, including those based on ICP, electroanalytical methods, NMR spectroscopy, Thermal analysis (DSC, etc.).
4. Working knowledge of computational chemistry packages and their application to issues affecting lithium-ion/sodium-ion cathode materials.
5. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
6. **The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

## **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 (AU$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. Visit [CSIRO Online](http://www.csiro.au/) and CSIRO [Manufacturing](https://www.csiro.au/en/Research/MF) 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
* Trusted