# Position Details

## Research Scientist/Engineer- CSOF6

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| The following information is for applicants | |
| Advertised Job Title | Energy Research Scientist (Geomechanics) |
| Job Reference | 86771 |
| Tenure | Indefinite full-time |
| Salary Range | AU$117,917 to AU$138,176 per annum (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Melbourne, VIC, Australia |
| 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 | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact James Kear via email at james.kear@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](mailto: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).

### Role Overview

Research Scientists conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. Research Scientists engage in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. They build and maintain networks, play a lead role in securing project funds, provide scientific leadership, pursue new ideas and develop novel approaches that create new concepts. Collaboration is a key aspect of research work at CSIRO and Research Scientists are expected to contribute to and lead multi-disciplinary project teams as well as actively engage in other collaborative initiatives such as technical communities of practice.

In this role, you will be part of CSIRO’s Energy Resources Research Program and will develop digital models and tools to simulate and monitor underground activities used in applications such as CO2 sequestration, mine preconditioning, energy storage, underground H2 storage, well integrity assurance and subsurface environmental assessments. As a research scientist, you will bring your combination of digital and modelling expertise to designing and delivering new solutions to address Australia’s subsurface energy challenges.

### Duties and Key Result Areas

* Prepare detailed research proposals to address energy technology challenges using novel subsurface techniques
* Establish external research collaborations with key industry and government clients
* Develop and deploy contemporary geomechanical/geophysical models suited to underground energy, hydrogen and CO2 storage through contemporary methods such as analytical and numerical approaches, machine learning techniques and artificial intelligence tools (such as TensorFlow, Scikit Learn, PyTorch, JAX, etc.)
* Create new and adapt existing scientific software
* Employ best practice software development and data management techniques and digital collaboration approaches (using tools such as CSIRO’s Data Access Portal, Jira, Git)
* Visualise and present monitoring and simulation output data to industry stakeholders, scientific panels and internal collaborators
* Author research publications and invention patents to maximise research impact
* 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.

## **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 geological and earth sciences, computer sciences, mathematics, physics or energy storage
2. A significant record of developing successful research proposals and delivering original, creative and innovative research that addresses complex or ill-defined problems
3. A publication history of scientific papers in peer reviewed journals and technical authorship of reports, grant applications, and/or patent applications
4. Previous experience in the development of multi-physics and/or mechanical models using finite element or other numerical methods
5. Programming experience and proficiency with C++ and Python
6. Demonstrated experience with contemporary software development tools and practises (e.g. source control / agile)

## **Desirable**

1. Experience with data driven modelling using AI/ML techniques and/or statistical techniques
2. Expertise in working as part of a multi-disciplinary team to deliver and deploy digital twin models or other similar decision support systems

## **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:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **Resource Management/Leadership:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **Judgement and Problem Solving:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Demonstrates flexibility in thinking and adapts to, and manages, the increasing rate of organisational change by adjusting strategies, goal and priorities.

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.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. 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
* Trusted