# Position Details

## Research Scientist/Engineer- CSOF6

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| The following information is for applicants |
| Advertised Job Title | Research Scientist/Engineer – Geological Storage of CO2 and Hydrogen |
| Job Reference | 93640 |
| Tenure | IndefiniteFull-time |
| Salary Range | AU$121,455 – AU$142,321 per annum plus up to 15.4% superannuation |
| Location(s) | Perth, WA |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader, Reservoir Productivity |
| Client Focus – Internal | 30% |
| Client Focus – External | 70% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Ben Clennell via email at ben.clennell@csiro.au or Amir Aryana via email at amir.aryana@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. |

**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

The role of Research Scientist/Engineer staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. They may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist/Engineer will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Research Scientist/Engineer in this position will contribute to the areas of impact of the Energy Business Unit, specifically related to Decarbonisation of Australian industry and Transition Fuels to achieve and aid government and industry towards achieving net zero emissions. This is a senior position within the team and the role will contribute to a range of projects to develop analytical and decision-making capability based on a core understanding of CO2 rock fluid behaviour and how management of these interactions is best influenced to maximise injectivity and storage capacity without increasing containment risks.

The Research Scientist/Engineer will join the ‘Reservoir Productivity’ team within CSIRO’s Energy business unit. This team is primarily based across Perth, where the core flooding facilities are located, and Melbourne; however this role will interact with other teams within the broader Resources Program, who are geographically dispersed throughout Australia.

### Duties and Key Result Areas

* Undertake research on CO2 sequestration and underground hydrogen storage with a focus on rock fluid interactions at core scale and modelling the dynamic behaviour of injected fluids on a reservoir/field scale.
* Develop novel experimental procedures using core flooding equipment using medical CT imaging as well as exploring integration opportunities with other laboratory equipment such as NMR, micro-CT, etc.
* Provide advice to ‘CarbonLock Future Science Platform’ related to utilisation, mineralisation of CO2, and to the ‘Hydrogen Energy Systems Future Science Platform’ and ‘Hydrogen Industries Mission’.
* Contribute to and/or lead aspects of scientific projects, including the written and oral communication of results and their implications.
* Undertake core flooding experiments whenever necessary.
* Upskill and train technicians on the use of the core flooding equipment.
* Undertake numerical reservoir modelling and production forecasting.
* Represent CSIRO externally, including in public forums, with industry or in the research sector or with Government.
* Liaise with clients to determine their needs and take personal responsibility for client satisfaction.
* Act as a trusted advisor, utilising knowledge of client’s business and understanding of their underlying needs.
* Anticipate industry and/or community needs and market direction through client liaison/networking and identify and adapt quickly to changes.
* Within broad guidelines, use professional expertise, knowledge of other disciplines and research experience/achievement to formulate, develop and complete an approved research program with general direction as to the aims of activities.
* Provide advice to policy makers and inform and transfer knowledge to non-scientific audiences.
* Undertake feasibility studies, demonstrating a considerable degree of originality, creativity and innovation in solving problems and introducing new directions and approaches.
* Maintain confidentiality when dealing with commercially sensitive information.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Present results in a meaningful format, communicate research results to clients and the scientific community through oral and written reports and journal papers.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* 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, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* 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.
* Other duties as directed.

## **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 petroleum engineering, geoscience, material science, or closely related field.
2. Demonstrated skills and experience in performing core flooding experiments specifically with CO2 injection with due regard to health and safety.
3. Demonstrated skills in numerical modelling, with proficiency in reservoir simulators used by industry such as CMG, Eclipse, Intersect, RMT, Tempest, etc.
4. Demonstrated experience in developing and leading projects (and/or activities within larger projects), including effectively managing resources and delivery of main outputs.
5. Evidence of strong scientific output, and an emerging national or international reputation, in reservoir engineering, porous media science or a closely-related field, through extensive quality publications in peer-reviewed journals.
6. Demonstrated ability to develop and maintain stakeholder/collaborator relationships.
7. Good communication and interpersonal skills, including working constructively with colleagues, collaborators and/or clients.

## **Desirable**

1. Deep understanding of physics and thermophysics of fluids in porous media.
2. Experience in reservoir characterization and rock physical property determination.
3. Skills in geochemical modelling applicable to fluid rock interactions, e.g. using Geochemist’s Workbench PHREEQC and/or experience with reactive transport modelling in porous media relevant to CO2-rock interactions.
4. Specific experience with fully capable compositional reservoir simulation using e.g., CMG, Eclipse/Intersect or ToughReact to understand and predict fluid PVT evolution, near wellbore thermal effects, fluid-fluid interactions between CO2 and hydrocarbons, etc.
5. Skills in data science or scientific programming such as advanced scientific data analysis, data visualization, machine learning etc.

## **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 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/>

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [CSIRO Energy](https://www.csiro.au/en/research/technology-space/energy) 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