# Position Description

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist/Senior Research Scientist – Hydraulic Fracturing |
| Job Reference: | 59002 |
| Classification**:** | CSOF5 – Research Scientist  CSOF6 – Senior Research Scientist |
| Salary Range: | AU $97,276 to AU $130,848 plus up to 15.4% superannuation |
| Location | Clayton, VIC |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | Australian Citizens Only  Australian/New Zealand Citizens and Australian Permanent Residents Only   * All Candidates |
| Percentage of Client Focus - Internal: | 25% |
| Percentage of Client Focus - External: | 75% |
| Reports to the: | Research Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Mr James Kearvia email: [james.kear@csiro.au](mailto:james.kear@csiro.au), Please do not email your application directly to Mr Kear. Applications received via this method may not be considered by the selection panel. |
| Contact Details For Applying | If you experience difficulties applying on line, call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon. |

## Role Overview:

This role will contribute to (CSOF5 Research Scientist) or lead (CSOF6 Senior Research Scientist) development of hydraulic fracturing technology or research tools to respond to industry and external stakeholder challenges. The focus of the role will be on environmental risk analysis, hydraulic fracture growth monitoring and technical challenges of hydraulic fracturing in coal seam and shale gas applications.

The hydraulic fracturing research group develops hardware and software tools using a range of investigative approaches including:

* laboratory experimentation,
* field scale trials and data collection,
* numerical modelling, and
* analytical methods

The ideal candidate will have a strong technical background coupled with an intense curiosity to adapt learned skills and approaches to new applications with an emphasis on characterising the environmental risks of hydraulic fracturing in an Australian and international context.

The role will offer the opportunity to enhance technical, leadership and management skills, with scope to develop novel research and technologies in support of Australian industries, community and environment.

## Duties and Key Result Areas:

* Contribute to (CSOF5) or lead (CSOF6) the development of new methods and technology products to simulate and monitor hydraulic fracture growth.
* Apply laboratory and field experimentation, to validate analytical and numerical advances and drive technology development outcomes.
* Contribute expertise to (CSOF5) or lead (CSOF6) research projects responding to environmental and social challenges for the onshore gas industry.
* Support (CSOF5) or lead and develop (CSOF6) collaborations with external and internal partners to deploy CSIRO technology and secure ongoing research funding.
* Communicate the findings of CSIRO’s research though leading the authorship of presentations, client reports and peer-reviewed journal and conference papers.
* Maintain active national and/ or international research collaborations to access/share leading edge concepts and technology to advance projects.
* Identify trends in hydraulic fracturing research and development to influence (CSOF5) or lead (CSOF6) future research directions.

*CSOF 5 Research Scientist*

* Allocate activities, direct tasks and manage resources (people, equipment, facilities, and funds) in research projects.
* Work collaboratively and honestly with internal and external colleagues, clients and partners to help define and satisfy objectives.
* Provide coaching and on-the-job training to technical staff and students to ensure projects are completed in accordance with research design.

*CSOF 6 Senior Research Scientist*

* Lead research projects including project coordination, task allocation and resource management
* Develop and negotiate new external research projects including scope and resource requirements.
* Maintain effective and efficient project teams and manage performance and resources, to achieve objectives.

## Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **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.**
6. **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:

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

## Essential Criteria:

1. **Research experience in a technical field relevant to hydraulic fracturing** or geomechanics (such as maths, physics, applied statistics, fracture mechanics, fluid dynamics etc)**, with expertise in at least one of analytical, numerical, fieldwork and/or experimental investigations as evidenced by academic publications**
2. **Communication abilities of a high order as evidenced by publication of papers and reports and an outstanding capacity to express scientific ideas and findings in plain English.**
3. **Proven academic or industrial research track record as evidenced by a combination of:**
   1. **a history of undertaking (CSOF5) or leading (CSOF6) applied research projects in an industry or academic setting**
   2. **awareness of (CSOF5) or active research in (CSOF6) environmental and social issues around unconventional gas development**
4. **A record of scientific innovation and leading uptake of new technologies.**

## Desirable Criteria:

1. Experience in solving wellbore and reservoir geotechnics or environmental risk assessment problems

**Additional desirable criteria for CSOF 6**

1. **Experience in developing and negotiating research projects with external clients**
2. **Project or personnel leadership experience**
3. **Professional network within petroleum, mining, and/or geothermal industries, or productive existing collaborations with academic and/or research institutions**

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents 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/>

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