# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist – Ore Deposit Geologist |
| Job Reference: | 59994 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | * All Candidates |
| Percentage of Client Focus - Internal: | 20% |
| Percentage of Client Focus - External: | 80% |
| Reports to the: | Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Margaux Le Vaillant via email Margaux.Levaillant@csiro.au  *Please do not email your application to Margaux Le Vaillant. Applications received via this method will not be considered by the selection panel.* |
| Contact Details For Applying | 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:

As a Research Scientist within Mineral Resource you will undertake research aimed at advancing our capability to map the chemistry of mineral systems, the controls on metal transport and the processes of mineral deposition within mineral systems, while developing applications to mineral exploration. The position will support CSIRO Mineral’s growing commitment to map systems at all scales in collaboration with the Australian mining and exploration industry. This novel and emerging role in CSIRO will involve working on industry and research projects aimed at studying interactions between pressure, temperature, bulk rock and fluid compositions responsible for ore forming processes, with an emphasis on Cu-bearing systems.

The Research Scientist will use their knowledge in metamorphic petrology, mineral chemistry, geochemistry and geology of magmatic and hydrothermal ore deposits, and combine it with results of various micro analytical techniques. The Scientist will also develop analytical protocols and workflows incorporating emerging techniques like micro-XRF mapping, LIBS and laser ablation, to analyse major and trace element compositions of rocks and minerals from a range of ore systems. The data will inform modelling approaches to quantifying the geological history of ore systems including the use of THERMOCALC, HCh, GWB or other reactive transport software. Within Mineral Resources we strive towards a process based approach to understanding fluid and metal sources, transport pathways and depositional mechanisms in ore systems.

CSIRO Mineral Resources evaluates new lab and field technologies for exploration through cover and advancing ore body knowledge. Our multidisciplinary team of researchers and engineers integrates multiple mineralogical and geochemical data sets to address challenges in exploration or mining, and we recognize the importance of understanding the potential and limitations of the respective technologies for geological applications. This position aims at developing new exploration and mining research projects to examine the interplay between deformation, metamorphism and fluid flow by integrating structural/microstructural and geochemical datasets at a range of scales.

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO's strategies. The Research Scientist may engage in scientific activities ranging from fundamental research to the investigation of specific industry or community problems. The Scientist 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 Scientist may be involved in leading research projects or undertaking work that has impact on the development of scientific or technical knowledge.

## Duties and Key Result Areas:

* Use metamorphic petrology, mineral chemistry, geochemistry and geological observations to understand magmatic and hydrothermal ore deposits.
* Work on Cu-bearing (magmatic, hydrothermal and sedimentary) mineralised systems.
* Establish microanalytical techniques as well as developing analytical protocols and workflows incorporating emerging techniques like micro-XRF mapping, LIBS and laser ablation, to analyse major and trace element compositions of rocks and minerals from a range of ore systems.
* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing and further research.
* Operate mineralogical and geochemical analytical equipment in the field and lab.
* Communicate effectively and respectfully in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals and for presentation at national and international conferences.
* Work collaboratively and honestly with internal and external colleagues, clients and partners to develop and progress challenging but realistic research plans for a range of research projects.
* Lead small research projects and assist with elements of larger projects including the negotiation of resource requirements, as well as lead, coach and supervise staff to ensure experiments are established in accordance with research design, within agreed timelines and budget.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Work and develop projects that delivers high-impact research with strategic relevance to the Minerals industry.
* Foster collaboration and interactions between scientists and clients, matching client needs with research outcomes.
* Other duties as directed.

## 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.

1. A doctorate and/or equivalent research experience in the field of geosciences, along with a **record of capability to write high quality reports and/or publications in peer reviewed journals.**
2. Experience of GIS and/or other geoscience-related software packages, as well as application of field techniques for real-time analyses.
3. Understanding of thermodynamics, and expertise in petrology, multi-element geochemistry, mineralogy and mineral chemistry with experience of using multiscale datasets to develop geological models.
4. Ability to apply studies of microscale processes to exploration for ore systems
5. Demonstrated ability to work within a multi-disciplinary research team, plus the motivation and discipline to carry out autonomous research, to achieve organisational goals.
6. A significant record of science innovation and creativity plus the ability to apply well developed research skills to scientific investigations.
7. Experience working in the minerals industry or in research projects with industry support, particular interest in work experience relevant to one or more of the following focus areas: Au and or Cu – Au (Hydrothermal/ magmatic), Sedimentary Copper, Supergene processes

**Desirable Criteria:**

1. Aptitude for application of thermodynamics to understand fluid-rock reaction processes and experience with the use of thermochemical and reactive transport software such as THERMOCALC, HCh, GWB.
2. Experience in understanding the geological controls on the petrophysical properties of rocks
3. Application of traditional and non-traditional isotope systematics to understand fluid-rock interaction.
4. Experience in operating a 4WD off-road, conducting field work (either in Australia or overseas) and willingness to conduct field work in remote locations in Australia as part of this position.

**CSIRO is a values based organisation. You will need to demonstrate behaviours aligned to our values of:**

* Integrity of Excellent Science
* Trust & Respect
* Creative Spirit
* Delivering on Commitments
* Health, Safety & Sustainability

## Special Requirements:

* **A current Australian driver’s licence, or ability to obtain Australian driver’s licence.**
* Travel within Australia, as well as field visits to mine sites and exploration camps, will be required.

## About CSIRO:

We imagine. We collaborate. We innovate.

Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.

Find out more! [www.csiro.au](http://www.csiro.au).

We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you.  
Find out more here! <https://www.csiro.au/en/Careers/A-great-place-to-work/Work-life-balance>

**CSIRO Mineral Resources**

CSIRO Mineral Resources works with industry to grow Australia’s resource base, increase productivity and drive environmental performance. We also provide critical scientific analysis that underpins a growing national dialogue on how resources impact society and the environment.

Find out more: <http://www.csiro.au/en/Research/MRF>

At **CSIRO Mineral Resources**, we recognise that the capability of our people is key to our success and provide the support for our people to develop, grow and reach their full potential. We offer a diverse and inclusive environment and strongly believe that our culture drives performance. Working at CSIRO you will be rewarded with a dynamic and challenging career path and an attractive remuneration package that includes a generous superannuation scheme, flexible work options, travel, and multiple leave options including paid maternity and parental leave. We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you.

The position will **be based at the Australian Resources Research Centre**, Perth, Western Australia, which offers outstanding facilities in a new and growing research environment. You will also have access to other world-class facilities based at the universities in Perth where CSIRO has collaborative arrangements in place, and at other CSIRO sites across Australia. Travel within Australia, as well as field visits to mine sites and exploration camps, will be required.