# Position Details

## Research Projects- CSOF3

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| The following information is for applicants |
| Advertised Job Title | X-Ray Systems Project Scientist |
| Job Reference | 96292 |
| Tenure | Specified Term of 3 years Full-time |
| Salary Range | AU$70,874 – AU$90,202 per annum plus up to 15.4% superannuation |
| Location(s) | Lucas Heights (Sydney), NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian or New Zealand Citizens
* Australian Permanent Residents
* Australian Temporary Residents, currently residing in Australia, with an existing valid visa and unrestricted work rights for the duration of the term (at least until August 2027) and **no requirement for visa sponsorship**. (Please note this does not include bridging visas or other visas that are dependent upon the approval of future visas).
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| Position reports to the | Team Leader, X-Ray Systems |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Joel O'Dwyer via email at joel.o'dwyer@csiro.au or phone +61 2 9710 6790 |
| 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 Projects staff 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.

The CSIRO Mineral Resources’ Sensing and Sorting (SAS) program is a world leader in the development of advanced on-line measurement and sensing technologies applicable to the mining and mineral processing industries. The program is a science-based technology innovations group, with a major focus on developing high impact, novel sensing technology.

This role will be part of the X-ray Technologies group within the program. The group develops X-ray analysis systems through basic research, laboratory experiments and development of prototypes through to market ready systems. The group is a multi-disciplinary team spanning, physics, electronics, software and mechanical design. CSIRO’s X-ray systems involve the design and development of specialised X-ray equipment, integrated with advanced engineering and software to control system operation, collect and process data, and communicate data to the technology end users.

The X-Ray Systems Project Scientist will support the lead scientist and wider team in the development and testing of our new Mineral and Elemental Analyzer (MEA) technology. The MEA utilises advanced X-Ray diffraction and X-ray fluorescence technology. This technology allows mineral processing plants to continuously monitor the mineralogy and elemental composition of ore in slurries in real-time, enabling real-time process monitoring and control. By leveraging this information, plants can become more efficient, saving costs and valuable resources.

With guidance and training, the X-Ray Systems Project Scientist will conduct laboratory trials, measuring a sample set from a processing plant using the MEA. They will then perform initial data analysis to assess the MEA's performance, collaborating on report drafting with the lead scientist. A background in experimental sciences is strongly desired.

Over time, the Project Scientist is expected to become proficient in XRD technology, and in the medium term will be involved in other technology developments and MEA proof of concept trials in Australia and potentially overseas.

### Duties and Key Result Areas

* Conduct tests of the laboratory systems/prototypes on suites of mineral samples. This will involve preparation of the samples and routine sample testing.
* Analyse and interpret data, draw conclusions, and present findings.
* Collaborate with team members to plan and execute project tasks.
* Clearly communicate research findings, project updates, and technical information to various audiences.
* Write reports for internal and external audiences.
* Assist the Senior Scientists with testing commissioning, fault finding of laboratory systems and prototypes.
* Ensure compliance with project requirements, regulations, and safety protocols.
* Stay updated with relevant scientific literature and developments and engage in continuous learning and development to enhance scientific and project management skills.
* Maintain documentation and records related to the project.
* Participate in meetings and workshops related to the project.
* Assessment of prototypes is conducted in industry and the role includes participation in field trials at mineral plants.
* Communicate 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 research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A tertiary degree in physical sciences or equivalent, ideally at honours level.
2. Demonstrated experience in designing and conducting experiments, collecting and analysing data, and interpreting results.
3. Working knowledge of a programming/scripting language.
4. Ability to plan laboratory experiments and use experimental apparatus or instrumentation.
5. Demonstrated analytical and problem-solving skills, with the ability to critically evaluate scientific information.
6. Excellent communication and interpersonal skills, including working constructively with research scientists, engineers, support staff and/or client personnel.
7. Ability to travel to and attend client sites in Australia or oversees with other team members for selected technology trial support duties.

## **Desirable**

1. Good theoretical understanding of physics concepts particularly in the areas of X-ray fluorescence and X-ray diffraction.
2. General knowledge of crystal systems, crystallography and minerals.
3. Proficient with Python for data analysis.
4. Demonstrated excellent experimental skills involving measurement hardware and prototyping.
5. General electronics knowledge.

## **Required Competencies**

* **Teamwork and Collaboration:** Proactively seeks and considers the ideas and opinions of others from within and outside the team to help form decisions, plans or actions.
* **Influence and Communication:** Puts forward ideas by presenting factual information supported by data, definitions, examples, illustrations or other aids, which will assist in conveying meaning.
* **Resource Management/Leadership:** Provides instruction and assists other staff to complete allocated tasks and activities.
* **Judgement and Problem Solving:** Identifies and considers the implications of a range of available alternatives in order to select the most appropriate response to problems of a familiar or recurring nature.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Willingness to change ideas or perceptions based on new information, contrary evidence or other people's points of view. Prepared to try out different approaches.

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.
* The successful candidate will be required to obtain and maintain a ANSTO security clearance to be allowed to enter CSIRO Lucas Heights site that is located at ANSTO.
* Willing and able to travel within Australia and overseas for periods of 2-3 weeks at a time, and to participate in field trials in remote locations

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Mineral Resources](https://www.csiro.au/en/about/people/business-units/mineral-resources) 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