# Position Details

## Research Scientist/Engineer- CSOF5

|  |  |
| --- | --- |
| The following information is for applicants | |
| Advertised Job Title | Experimental Nuclear/X-ray Physicist |
| Job Reference | 80567 |
| Tenure | Specified Term of 3 years |
| Salary Range | AU$102,742 to AU$111,165 pa + up to 15.4% superannuation |
| Location(s) | Lucas Heights, NSW |
| 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 | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Yves Van Haarlem via email at [yves.vanhaarlem@csiro.au](mailto:yves.vanhaarlem@csiro.au) or phone +61 2 9710 6789 |
| 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. |

### Role Overview

We are looking to appoint a scientist within the X-ray Technologies Group at our Lucas Heights laboratory located on the southern edge of Sydney. The X-ray technology group is part of CSIRO’s Mineral Resource Business Unit; we are world leaders in the development and commercialisation of technologies that enable the assessment of elemental and mineralogical composition of ore in real-time or near real time. Details of some of our recent technology developments that have been successfully commercialised can be found at:

* Chrysos (<https://www.chrysos.com.au/>)
* OLGA (https://www.gekkos.com/solutions/olga)

You, the successful applicant, will take a leading role in the progression of two of our core technologies: real time Gamma Activation Analysis (GAA) and real time X-ray imaging and reconstruction. Working in both these areas, you will develop and test prototype systems, organise experiments, lead technology trials, communicate findings and collaborate with industry partners.

### Duties and Key Result Areas:

* Under supervision of senior researchers, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Appropriate existing experimental methods, and creating new ones, to measure elements or minerals using GAA and X-ray imaging.
* Exert knowledge and experience to formulate ideas for new analysers.
* Run Monte Carlo simulations to test ideas and/or validate experiments.
* Organise all facets of experiments to further an idea; this includes procurement of hardware, set up equipment like X-ray tubes, flat panels and scintillators, use computer programming to run the experiment and data acquisition.
* Analyse experimental data and communicate outcomes.
* Assume a leadership role (can be as project leader) and collaborate with engineers to design and build industrial analyser prototypes for testing in industry.
* Interact with (potential) clients and stakeholders to forward project objectives.
* Take part in and/or organise technology field trials in Australia and overseas.
* Maintain safe working practices when working with hazardous materials.
* 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.

## **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:** 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.
* **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.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **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.
* **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**

#### 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 (nuclear) physics, or physical sciences or engineering
2. Demonstrated excellent experimental skills involving X-ray and gamma-ray measurement hardware
3. Good theoretical understanding of physics concepts particularly in the areas of nuclear and/or X-ray physics.
4. Demonstrated ability to design and independently deliver assigned research project objectives and report outcomes within a specified timeframe.
5. Good communication and interpersonal skills, including working constructively with research scientists, engineers, support staff and/or client personnel.
6. Familiarity with Python or other scripting/programming languages.
7. Demonstrated ability to undertake original, creative and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
8. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications

## **Desirable:**

1. Post PhD experience in research or industry.
2. General electronics knowledge
3. Experience in X-ray imaging and image reconstruction techniques
4. Experience with GAA and usage of LINACs
5. Any experience with Photo-multiplier tubes, silicon drift detectors, X-ray tubes, scintillators, signal processing or flat panels for X-ray imaging is a plus.

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.

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people 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 an ANSTO security clearance to be allowed to enter CSIRO Lucas Heights site that is located at ANSTO.
* 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/
* Willing and able to travel within Australia and overseas for periods of 2-4 weeks at a time, and participate in field trials in remote locations (COVID-19 permitting).

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

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

Find out more about CSIRO [Mineral Resources](https://www.csiro.au/en/Research/MRF)