



POSITION DESCRIPTION

Position Title:	Accelerator Science Officer
Cluster / Business Unit / Division	Nuclear Science and Technology
Section or Unit:	Centre for Accelerator Science (CAS) / Science Group
Classification:	Band 4 / 5 (Linked)
Job Family:	Research
Position Description Number:	PD-2281
Work Contract Type:	Technical
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The Accelerator Science Officer applies scientific and technical expertise to support the delivery of the CAS user program by preparing and analysing/measuring samples using established methods for accelerator science techniques and capabilities, including Accelerator Mass Spectrometry (AMS), Ion Beam Analysis (IBA), ion beam irradiation. The role also involves participation in research and development activities for establishing new capabilities or enhancing technique performance. The role fosters excellent engagement within the CAS team, crossing over between the Science Group and the Chemistry Group, and working with the Accelerator Systems and Development Group.

ORGANISATIONAL ENVIRONMENT

ANSTO leverages great science to deliver big outcomes. We partner with scientists and engineers and apply new technologies to provide real-world benefits. Our work improves human health, saves lives, builds our industries and protects the environment. ANSTO is the home of Australia's most significant landmark and national infrastructure for research. Thousands of scientists from industry and academia benefit from gaining access to state-of-the-art instruments every year.

Nuclear Science & Technology (NST) incorporates ANSTO's research, innovation, landmark infrastructure and associated platforms and capabilities. NST conducts research and development in relation to nuclear science and technology and connects people, transfers knowledge, and provides nuclear-based products and services for the benefit of Australia.

The Centre for Accelerator Science (CAS) is a national user facility and multi-disciplinary team of scientists and engineers supporting academic and industry users across Australia and the world with a suite of ion beam accelerator instrumentation for ultra-sensitive analysis and irradiation applications. The facility informs policy, provides critical services for IAEA, and enables discovery and innovation in areas such as environment, climate and health sciences, space technologies, advanced energy, nuclear and quantum materials, and cultural heritage.

CAS offers accelerator mass spectrometry, sample processing and preparation, ion beam analysis, ion beam implantation, and ion beam irradiation - together in one centre - backed by decades of accumulated experience in accelerator science and in maintaining complex accelerator systems.

CAS capabilities deliver:

- Ultra-sensitive analysis via a suite of radioisotope dating, trace element and actinide isotope analytical techniques
- Precision irradiation via a suite of ion beam irradiation modalities covering a wide range of tasks including material doping, nanostructure fabrication, bulk or surface material modification, advanced material and device fabrication, or radiation testing
- End-to-end user provision including consulting, experiment design, sample preparation, sample analysis, and results interpretation.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities – Band 4

- **Maintain safe and compliant work environment**
Perform all work in accordance with operational safety, security, and sustainability requirements, adhere to applicable standards, legislative and regulatory requirements, and support a positive safety culture.
- **Contribute to sample processing**
Apply expertise in laboratory chemistry and/or laboratory instrumentation and characterisation to process and prepare samples using established methods, with quality control and efficiency in mind
- **Contribute to accelerator operations**
Apply conceptual understanding of accelerator systems, ion beam propagation, and ion beam interactions to operate accelerators for accelerator science applications for a variety of user projects using established methods.
- **Contribute to user data management**
Assist with data processing and analysis using established methods and provide results to users under supervision of CAS senior scientists.
- **Contribute to method development and enhancement**
Perform enhancement of discrete components of existing sample processing and analysis methods through experimentation and testing and develop new laboratory techniques under direction of CAS senior scientists.
- **Provide training and support to users**
Provide training to users (visitors and students) in routine sample processing, laboratory practices and accelerator operations, and support their work as required.
- **Contribute to work management activities**
Participate in management functions such as report writing, project planning, meeting organisation, purchasing, workflow scheduling.
- **Continuous improvement**
Ensure regulatory compliance procedures and safe work practices are revised and enhanced in line with best practise to ensure all processes and systems comply with updated standards and regulatory frameworks.

Key Accountabilities – Band 5

- **Support CAS user program**
Apply expertise in accelerator-based techniques to support research excellence and enable successful outcomes from the CAS user program,, by supporting users through the user experience workflow, from sample preparation, accelerator operation, and sample analysis, through to data processing and results reporting.
- **Develop new techniques and instruments, and improve existing methods**
Research, plan and undertake method development to implement new methods or to improve existing methods to meet international best practice and support emerging applications, with advice from expert users and CAS senior scientists.
- **Enhance training of staff and users**
Support users and staff training in established laboratory methods, quality control procedures and regulatory/safety controls and develop innovative and streamlined methods for improving the efficacy and efficiency of user training.
- **Maintain and develop individual learning and knowledge currency**
Develop knowledge of current best practice in CAS accelerator-based techniques by performing regular literature reviews and attending relevant workshops, conferences and symposia; develop expertise in applications of accelerator techniques to enable provision of scientific advice to CAS users.
- **Build networks through collaborative research and development**
Engage with the CAS user community, stakeholders, and the scientific peers at other accelerator

laboratories; participate in outreach activities to promote CAS science and stimulate new opportunities.

- **Undertake additional duties as required and during periods of leave of other staff.**

Decision Making – Band 4

- Decisions on work schedules and task priorities for this position will be governed by ANSTO Research Portal commitments, CAS Accelerator Schedule and the CAS business plan.
- The position holder will respond to key work priorities within the context of agreed Accelerator schedules and associated sample preparation schedules and workflows determined by the Accelerator Scheduling team.
- The position holder will use judgement based upon their knowledge and experience to negotiate changes to their key work priorities in response to unexpected variations of the sample processing and/or accelerator operations schedule, and will liaise with CAS team members when workflows are impacted.
- Variations to standard methods and quality control measures will be based on sound evidence and quality procedures, but at times may be required to be made in the absence of complete information or advice from the client/collaborator, requiring effective judgements to be made under pressure in consultation with other team members

Decision Making - Band 5

- Decisions on minor changes to quality systems or regulatory compliance systems project will be taken with notification of CAS Group Leads, process owners and Regulatory Officers; major changes will require consultation with the CAS group leads and affected work teams.
- Decisions on significant changes to work plans and priorities will be made in consultation with CAS Group Leaders, CAS accelerator operators, and Portal Project contacts.
- Will contribute to planning and decision making on strategic developments in user project management, regulatory compliance and quality control system.
- The levels of authority delegated to this position are those approved and issued by the Chief Executive Officer. All delegations will be in line with the ANSTO Delegation Manual AS-1682 (as amended or replaced).

Key Challenges

- Managing work schedule to deliver projects from sample receipt through to results provision.
- Working across organisational units within CAS.
- Keeping abreast of recent developments in the field, ensuring continual improvement and implementation of best practise.
- Improving the user experience through reduced project turnaround times while maintaining highest quality.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Line Manager	<ul style="list-style-type: none"> • Receive guidance and direction • Provide expert, authoritative and evidence based advice • Recommend and gain endorsement for plans and goals and other initiatives
Work area team members in CAS Science Group, CAS Chemistry Group and CAS	<ul style="list-style-type: none"> • Establish constructive relationships and communications • Provide expert advice and analysis on areas of expertise • Contribute to group decision making processes, planning and goals

Accelerator Systems and Development Group	<ul style="list-style-type: none"> • Collaborate and share accountability • Negotiate, communicate and resolve conflicts
External	•
CAS user community	<ul style="list-style-type: none"> • Collaborate and communicate in a professional manner • Establish network of contacts

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Leader, CAS Science Group
Direct Reports	Nil
Indirect Reports	Nil

Financial Data (2022/2023)

Revenue / Grants	NA
Operating Budget	NA
Staffing Budget	NA
Capital Budget	NA
Assets	NA

Special / Physical Requirements

Location:	<p>Lucas Heights</p> <p>Working in different areas of designated site/campus as needed</p>
Travel:	<p>May be required to travel to other ANSTO sites from time to time</p> <p>Occasional travel nationally and possibility of travel internationally</p>
Physical:	<p>Office based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer)</p> <p>Some labour-intensive physical requirements from time to time (sitting, standing, infrequent manual handling up to 20kg)</p> <p>Public speaking</p> <p>Wearing personal protective equipment for the handling of hazardous and/or radioactive materials</p> <p>Occasional operation of engineering equipment or machinery, subject to suitable approvals and training</p> <p>Perform duties with and in an area where hazardous chemicals or materials are handled under tightly controlled safety conditions</p> <p>Operation of accelerator equipment and systems</p>
Radiation areas:	<p>May be required to work in radiation areas under tightly regulated conditions</p> <p>Perform duties in an area where radioactive materials are handled under tightly controlled safety conditions</p>
Hours:	<p>Willingness to work extended and varied hours based on operational requirements</p> <p>After hours work may be required for short and infrequent periods</p>
Clearance requirements:	Satisfy ANSTO Security and Medical clearance requirements

Workplace Health & Safety

Specific role/s as specified in AP- All Workers

2362 of the ANSTO WHS

Management System

Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART

Refer to published Organisational Chart

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 4

1. Bachelor of Science (Hons) Degree in Chemistry, Physics, Earth Sciences or related discipline.
2. Experience with and aptitude for work in a sample preparation or chemistry laboratory.
3. Experience with and aptitude for work with complex scientific instrumentation.
4. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with work colleagues, external users and other stakeholders.
5. Ability to work independently and able to plan and manage time to meet deadlines and objectives.
6. Strong customer focus and the ability to function well in a scientific user facility, work in a multicultural environment and develop and maintain productive working relationships.
7. Demonstrated ability to follow policy, procedures and guidelines.

Band 5

1. Bachelor of Science (Hons) Degree in Chemistry, Physics, Earth Sciences or related discipline.
2. Higher degree by research or equivalent research experience in a science laboratory.
3. Experience with applying techniques of analytical chemistry.
4. Experience with complex scientific instrumentation or apparatus including high vacuum systems, high voltage, particle beams and radiation sources.
5. Demonstrated ability to innovate and develop new and enhanced analytical methodologies and techniques.
6. Demonstrated ability to establish and expand productive professional networks and relationships.
7. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with work colleagues, external users and other stakeholders.
8. Experience of working independently and ability to plan and manage time to meet deadlines and objectives.
9. Strong customer focus and the ability to function well in a scientific user facility, work in a multicultural environment and develop and maintain productive working relationships.
10. Demonstrated ability to follow policy, procedures and guidelines.

Linked Role Transition

Transition to the higher band within the linked role is not automatic and ability to perform Band 5 accountabilities will need to be demonstrated and assessed. This can be done by completing the attached form and completing a full written submission demonstrating and justifying how an employee meets the transition requirements.

VERIFICATION

This section verifies that the line manager and appropriate senior manager/executive confirm that this is a true and accurate reflection of the position.

Line Manager		Delegated Authority	
Name:	Michael Hotchkis	Name:	Ceri Brenner
Title:	CAS Science Group lead	Title:	CAS Leader
Signature:		Signature:	
Date:	16/12/2022	Date:	16/12/2022

**Accelerator Science Officer (PD-2281)
Band 4 to Band 5 Transition Checklist**

Name:	
Commencement Date:	
Assessment Date:	

Written submission demonstrating and justifying how the employee meets requirements must also be attached.

Requirements for transition	Met Criteria
a) Minimum 5 years working as Accelerator Science Officer (Band 4) OR b) Minimum 5 years equivalent experience	<input type="checkbox"/> Yes <input type="checkbox"/> No OR <input type="checkbox"/> Yes <input type="checkbox"/> No
Higher degree by research or equivalent	<input type="checkbox"/> Yes <input type="checkbox"/> No
Extensive experience with accelerator-based science and demonstrate meeting all below requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No

Demonstrated ability to independently and responsibly perform Band 5 accountabilities and apply required knowledge, skills and experience for the Band 5 position including:	
Undertake Band 4 accountabilities at a technical expert level and independently without supervision or guidance	<input type="checkbox"/> Yes <input type="checkbox"/> No
Experience working on user projects from initial proposal through to project completion	<input type="checkbox"/> Yes <input type="checkbox"/> No
Demonstrated capacity to contribute to innovations and capability development projects	<input type="checkbox"/> Yes <input type="checkbox"/> No
Demonstrated capacity to develop networks with users and other stakeholders	<input type="checkbox"/> Yes <input type="checkbox"/> No
Technical knowledge and scientific understanding of CAS capabilities sufficiently developed to represent ANSTO and present CAS work at scientific and industrial fora	<input type="checkbox"/> Yes <input type="checkbox"/> No
Professional and specialist expertise developed sufficiently to contribute to scientific papers, client reports, training materials and new quality system documentation	<input type="checkbox"/> Yes <input type="checkbox"/> No
Demonstration of teamwork, knowledge sharing, collaborative and user focussed working environment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Training, supervision and provision of expert advice to staff and users (scientists, researchers, post-docs, students) to ensure effective and safe work within the facility and to ensure safety, regulatory and legislative compliance	<input type="checkbox"/> Yes <input type="checkbox"/> No

Attach written submission demonstrating and justifying how the employee meets each of the above requirements.

Manager Recommendation

I have reviewed the employee's competence in accordance with Linked Role PD-2281 and certify that the employee meets all requirements for transition and recommend transition from Band 4 to Band 5 be endorsed as demonstrated in the attached written submission detailing how the employee meets each of the requirements.

Name & Title:			
Signature:		Date:	

Leader, Centre for Accelerator Science

I have reviewed all information and approve transition from Band 4 to Band 5.

Name & Title:			
Signature:		Date:	
Effective date of transition:			

Appendix 1

ANSTO Job Families
Accounting & Finance
Administration
Communications & Marketing
Compliance & Regulation
Engineering and Technical
Human Resources
ICT & Digital Solutions
Information & Knowledge Management
Legal
Manufacturing
Monitoring & Audit
Operations
Organisational Leadership
Project & Program
Research
Science
Security & Intelligence
Senior Executive
Service Delivery
Strategic Policy
Trades & Labour