Australian Government

ANSTO
Science. Ingenuity. Sustainability.

POSITION DESCRIPTION

Position Title:	Accelerator Scientist
Cluster / Business Unit / Division	Nuclear Science and Technology
Section or Unit:	Centre for Accelerator Science – Science Group
Classification:	Band 6
Job Family:	Science, Research
Position Description Number:	PD-2220
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM

POSITION PURPOSE

The Accelerator Scientist is a role within the Science Group of the Centre for Accelerator Science (CAS). The role applies scientific expertise and experience to the operation, development, and applications of accelerator capabilities, as well as research, industry engagement and outreach activities. The role fosters excellent engagement with other members of the Science Group and other operational teams across the facility. The role requires development of knowledge of the capabilities, techniques, and instrumentation within CAS to enable the best possible scientific outcomes. The role provides input into scientific development at CAS through strategic planning and contributions to the planning for new beamlines and applications.

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 research 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 Research Infrastructure portfolio consists of platforms established on scientific infrastructure and capabilities, with a number of the platforms categorised as landmark infrastructure. This includes a range of scientific assets, infrastructure, capability development & delivery for multi-decadal, multi-disciplinary, multi-user platforms for a collaborative user community and for internal research and development endeavours.

The Centre for Accelerator Science (CAS) provides expertise in accelerator science applications, and is the nucleus around which new science and industry networks form as CAS scientists interact with researchers in the user, collaborator, and wider scientific community. CAS provides world-class capabilities utilising ion beam instrumentation and accelerator-based techniques for ultra-sensitive analysis and precision irradiation applications, including radioisotope dating, trace element and actinides analysis, surface modification and engineering, and radiation testing. CAS delivers techniques that not only enhance current fundamental and applied research, but also open up new avenues of investigation to Australian science. The facility promotes international collaboration to enable leading-edge research and development, and is a hub for research that greatly benefits Australia and the international scientific community.

The CAS Science Group provides an end-to-end user experience to academic-based researchers, commercial, industry and government users. This includes ensuring delivery of support and access to the diverse capabilities of CAS through the full research journey, from consultation and planning through to interpretation and publication. Members of the Science Group collaborate with other ANSTO teams to maintain world-class capabilities and to develop new capabilities and systems. They achieve high impact

research outcomes in line with ANSTO's research mission and through collaborations with the user community. Science Group members also deliver highly effective outreach and training outcomes to promote the capabilities and achievements of the facility.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Provide scientific and technical support, advice and training to national and international CAS users, including the making of scientific and technical decisions, ensuring the outcomes from allocated user access projects are maximised and the user experience is optimal;
- Support user projects by assisting with planning, by operating accelerator beamlines and instruments, performing experiments and/or simulations and/or analytical studies (where relevant) and data reduction, and analysing and interpreting data as required by users;
- Liaise with the Australian and international scientific community to develop the user base for CAS to ensure maximum usage of equipment, and to develop the community of collaborators and users;
- Develop knowledge of international best practice and new technological developments, and apply expertise to accelerator capability development activities and projects to improve and expand capabilities for research, innovation, and industry applications;
- Contribute to the CAS Asset Management Plan, which includes maintenance, calibration, documentation and collaboration with supports groups within CAS and ANSTO;
- Contribute expertise and knowledge to the development of plans and processes for the installation of new beamlines, accelerator-based facilities and capabilities;
- Undertake industry engagement activities to enable the delivery of optimal outcomes to industry and commercial-access users to support ANSTO's research translation aims. Promote techniques, capabilities and applications to industry and commercial-access users to identify industry leads and convert them to opportunities and contracts;
- Promote and develop outreach activities on behalf of CAS and ANSTO. Participate in professional forums and other professional associations. Highlight the impact and benefits of the facility to the scientific community, external stakeholders, and general audiences at the local and international level;
- Use research networks to coordinate and collaborate with national and overseas scientists to produce research outcomes captured in international journals, and to increase usage of CAS facilities;
- Undertake research which increases own capacity for accelerator usage and understanding, and improves scientific visibility of the profile and facilities of CAS. Deliver such research and development which is aligned with user needs;
- Ensure appropriate policy, procedures, and guidelines are adhered to associated with accelerator facilities in particular in relation to WHS, radiation safety and plant/equipment;
- Work collaboratively to share scientific expertise to contribute to the research culture within the CAS, NST and ANSTO;
- Undertake specific responsibilities as assigned by the Science Group leader;
- Undertake additional duties as required and during periods of leave of other staff.

Decision Making

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the NST strategy and CAS objectives provide the context for the position.
- The position works within a framework of legislation, policies, professional standards and resource parameters. Within this framework the position has some independence in determining how to achieve plans and objectives and must ensure compliance to relevant regulations at all times.
- The position is fully accountable for the accuracy, integrity, and quality of the content of advice, analysis and interpretation provided.
- Determine key work priorities within the context of agreed work plans and consult with line manager on complex, sensitive and major issues that have a significant impact.

- In consultation with team members and line managers, the position assists in the development of work plans and overall objectives and strategy.
- 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

- Develop and maintain a national reputation for high-quality application of accelerator techniques for world-class research;
- Carry out work in a heavily regulated environment, adherence to all regulations, working in accordance with operational requirements and tight deadlines;
- Maintain knowledge and expertise with new systems that are custom built;
- Achieve significant research outcomes while working within time and resource constraints.

KEY RELATIONSHIPS

Who	Purpose
Line Manager	• Receive guidance and direction • Provide expert advice and recommendations • Report on user project progress • Collaborate on plans and activities for the accelerator facilities and related matters • Recommend and gain approval for capability modifications, enhancements and improvements, and process/procedure changes or improvements • Escalate issues and propose solutions
CAS Science Group	• Provide advice, analysis, and recommendations • Contribute to group-decision-making processes, planning, and goals • Collaborate and share accountability, information, ideas, and workloads • Negotiate and resolve conflicts • Combined analysis and problem resolution
CAS Chemistry Group, CAS Accelerator Systems and Development Group	• Collaborate and plan to manage day to day operations, sample delivery, scheduling, technical maintenance and development activities • Collaborate on facility and experiment requirements • Liaise to determine faults, troubleshooting and repairs
CAS users and collaborators from ANSTO, local and international universities, research institutes and industry	• Facilitate, plan and manage experiments, advise on data processing, analysis and interpretation where required • Understand user requirements and desired outcomes • Provide expert advice, analysis, and results interpretation • Provide training & supervision for users working on accelerator facilities • Ensure safety and regulatory compliance • Collaborate and share information • Build and maintain relationships • Contact and/or regular meetings to establish and ensure progress on research matters, proposals, experiments, data, etc, in order to advance research projects.
Scientific Community (including overseas laboratories and research organisations)	• Develop and maintain national and international linkages around CAS scientific operations and research

	• Regular contact via user meetings, conferences, workshops, business meetings and functions, email lists and other communication channels
Suppliers and Contractors	• Regular contact in order to formulate and plan for accelerator requirements now or in the future • To ensure effective beamline development; project management and procurement requirements
Wider Community (Stakeholders, state and federal government, and general public)	• Promoting CAS science to foster a greater understanding and appreciation of the facilities and science in Australia • Formulate, communicate and disseminate 'research stories' to relevant scientific and non-scientific audiences

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Leader, CAS Science Group
Direct Reports	None
Indirect Reports	None

Financial Data (2022/2023)	
Revenue / Grants	NA
Operating Budget	NA
Staffing Budget	NA
Capital Budget	NA
Assets	NA

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

Workplace Health & Safety	
Specific role/s as specified in AP-2362 of the ANSTO WHS Management System	All Workers
	Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART

As per published Organisational Chart.

KNOWLEDGE, SKILLS AND EXPERIENCE

1. PhD (or equivalent experience) in Physics, Materials Science, Earth Science, or a related discipline;
2. Post-doctoral (or similar/equivalent) experience in a relevant area of physical sciences or applied research;
3. Experience with ion beam analysis, ion beam modification of materials or accelerator mass spectrometry;
4. Experience with design, construction and operation of complex research equipment incorporating high voltage, high vacuum and/or radiation detector components;
5. Ability to troubleshoot problems on complex systems with agility and resilience in real-time;
6. Demonstrated sound contribution to research which has made a recognisable advancement of knowledge or its application at a national level and solid track record of publication;
7. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with users and other stakeholders;
8. Capability to communicate science effectively at the international level through conferences and workshops.
9. Ability to work independently and able to plan and manage time to meet deadlines and objectives;
10. Strong customer focus and the ability to function well in a scientific user facility, work in a multi-cultural environment and develop and maintain productive working relationships;
11. Demonstrated ability to follow policy, procedures and guidelines;
12. Personal qualities that will add value to a team operating in a high-level client/user, safety and quality environment.

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:	Leader, CAS Science Group	Title:	Leader, CAS
Signature:		Signature:	
Date:		Date:	

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