

POSITION DESCRIPTION

Position Title:	Accelerator Scientist / Senior Accelerator Scientist
Cluster / Business Unit / Division	Nuclear Science and Technology
Section or Unit:	Centre for Accelerator Science – Science Teams (IBM, Irradiations, AMS Radiocarbon, AMS Cosmogenic and Actinide)
Classification:	Band 6/7 (Linked)
Job Family:	Science, Research
Position Description Number:	PD-2664
Work Contract Type:	Science / Research
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Science

POSITION PURPOSE

This is a linked role encompassing two levels: Accelerator Scientist and Senior Accelerator Scientist. The role applies scientific expertise to the operation, development, and application of accelerator capabilities within a Science Team of the Centre for Accelerator Science (CAS).

The Accelerator Scientist is a role within a Science Team 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 Team 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.

The Senior Accelerator Scientist is an expert role within a Science Team of the Centre for Accelerator Science (CAS). The role applies significant scientific expertise and experience to the operation, development and scientific application of accelerator capabilities. The role fosters excellent engagement with other members of the Science Team, with Teams across CAS, the broader NST team, and other operational teams across ANSTO. The position requires substantial scientific expertise and experience to support the optimal operation of CAS facilities, drive research and industry engagement, and contribute to CAS's strategic growth. The role will be required to understand the capabilities, techniques, and instrumentation within CAS and apply expert knowledge to enable the best possible scientific outcomes. Additionally, the role has significant input into scientific development at CAS through strategic planning and contributions to the planning for new accelerator capabilities and research initiatives.

ORGANISATIONAL ENVIRONMENT

ANSTO is a leading global nuclear science and technology organisation delivering world class research and expertise to benefit Australia and support a more sustainable future. Using nuclear science, we improve health, support industries, provide expert advice to government on nuclear technologies and help develop Australia's nuclear workforce.

ANSTO's Nuclear Science & Technology (NST) division incorporates landmark research infrastructure and capabilities, connecting people, transferring knowledge, and providing nuclear-based products and services for the benefit of Australia and its international partners.

ANSTO's Centre for Accelerator Science (CAS) is a national user facility that supports Australian and international research communities through a suite of advanced accelerator-based instruments and capabilities for ultra-sensitive accelerator mass spectrometry, ion beam analysis, implantation, and irradiation applications. CAS provides world-leading expertise in radioisotope dating, trace element and isotope analysis, surface engineering, and radiation effects testing. As a hub for scientific innovation and

collaboration, CAS enables researchers from academia, government, and industry to access cutting-edge techniques that advance both fundamental and applied research, driving translation, impact, and discovery. By addressing nationally significant priorities and global challenges, CAS facilitates evidence-based policy development, industry innovation, and scientific breakthroughs, while also opening new avenues for exploration and discovery.

The CAS Science Teams provide world-class user service and expertise to users of the Centre for Accelerator Science, including academic-based researchers, government and industry clients. This includes ensuring delivery of support and access to the diverse science capabilities of CAS, from consultation and planning through to interpretation and publication. Members of the Science Teams 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 Team members also deliver highly effective outreach and training outcomes to promote the capabilities and achievements of the facility.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities – Band 6

- 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 Teams 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 Team leader;
- Undertake additional duties as required and during periods of leave of other staff.

Key Accountabilities – Band 7

In addition to performing all Band 6 key accountabilities, the key accountabilities for a Band 7 position Include:

- Utilise extensive knowledge and expertise to provide advanced scientific and technical support, advice, and training to national and international accelerator science users, including the making of scientific and technical decisions, ensuring optimal outcomes from allocated accelerator-science access and an excellent user experience;
- Apply extensive expertise to initiate and lead accelerator development activities and projects across CAS, improving and expanding capabilities for both research and industrial applications. Identify and apply for alternative sources of funding to support development activities. Contribute expertise to the planning and installation of new beamlines, facilities and capabilities at CAS;
- Ensure adherence to relevant policy, procedures, and guidelines associated with CAS facilities, particularly in relation to WHS, regulations and compliance, radiation safety associated with accelerators and associated plant, equipment, and quality;
- Contribute expert knowledge to support the CAS Asset Management Plan, including responsibilities for maintenance, calibration, documentation and close collaboration with CAS Accelerator Systems and Development teams;
- Liaise with the Australian and international scientific community to expand CAS's user base, ensuring maximum usage of accelerator equipment, fostering a community of collaborators and users, and supporting potential revenue streams;
- Initiate and lead internationally recognised research that advances accelerator techniques at CAS, increases their capacity and utilisation, and enhances CAS's scientific profile through publication in leading journals. Ensure research and development is aligned with the needs of CAS stakeholders;
- Maintain and apply knowledge of international best practice and technological developments to ensure CAS accelerator capabilities are improved and upgraded to remain at the state-of-the-art and internationally competitive. Develop the capability to recognise and act on opportunities emerging from a global view of techniques enabled by CAS facilities;
- Undertake industry engagement activities within the CAS Science Team to deliver optimal outcomes for industry and commercial clients, enhancing CAS's reputation. Use expert knowledge to promote techniques, capabilities and applications to industry clients, identify and converting leads to opportunities and contracts;
- Promote and develop outreach activities on behalf of CAS Science Team and on behalf of ANSTO, participating in professional forums and associations. Highlight CAS's impact and benefits to the scientific community, external stakeholders, and the general public at both local and international levels;
- Use research networks to coordinate and collaborate with local, national and international scientists to produce research outcomes documented in leading international journals and other reputable publications, increasing the usage and impact of CAS facilities;
- Coach and mentor researchers, post-doctoral fellows, and students (as opportunities arise) in both their use of accelerator techniques and broader research endeavours. Collaborate with colleagues across the CAS Science Teams and across ANSTO, sharing scientific expertise and contributing to the research culture within CAS, NST, and ANSTO;
- Undertake specific CAS responsibilities commensurate with skills and expertise, as assigned/delegated by the Science Team lead;
- Undertake additional duties as required and during periods of leave for 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

Key Challenges – Band 6:

- 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 Challenges – Band 7:

- Develop and maintain a leading national and emerging international reputation for high-quality application of accelerator science techniques to 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 extensive research outcomes while not jeopardising the key priority of delivering quality experience for CAS users.

KEY RELATIONSHIPS

Who	Purpose
Line Manager	Band 6 • 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. Band 7 • Continue all the above, with increased independence. • Report on compliance of the facility and progress of strategic initiatives.

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Work-area team members - Science Team	Band 6 and 7: • Provide expert 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 Team and CAS Accelerator Systems and Development Teams	Band 6 • 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 Band 7 • Continue all Band 6 interactions. • Collaborate, plan on facility and experiment requirements •
NST Researchers and Scientists, and other ANSTO staff utilising facilities	Band 6: • Facilitate, plan, and manage experiments; advise on data processing, analysis, and interpretation. • Understand user requirements and desired outcomes. • Provide expert advice, analysis, interpretation, and ensure regulatory compliance. • Provide training and 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. Band 7: • Continue all Band 6 interactions. • Provide coaching and mentoring in use of accelerator science techniques and in broader research •
External	
CAS Users from local and international universities, research institutes and industry	Band 6: • Facilitate, plan, and manage experiments.

	• Advise on data analysis and interpretation. • Understand user requirements and desired outcomes. • Provide expert advice, analysis, and results interpretation. • Provide training and supervision during facility use. • Ensure compliance with safety and operational standards. • 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. Band 7: • Continue all Band 6 interactions. • Provide coaching and mentoring in use of accelerator science techniques and in broader research •
International research organisations	Band 6 and 7: • Develop and maintain international linkages around accelerator science operations and research. •
Suppliers and contractors	Band 6 • Regular contact in order to formulate and plan for accelerator requirements now or in the future Band 7 • To ensure effective beamline development; project management and procurement requirements • Contractor supervision

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Science Team Lead (IBM, Irradiations, AMS Radiocarbon, AMS Cosmogenic and Actinide)
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 Moderate amount of 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
Linked Role:	The Transition from Band 6 to Band 7 is not automatic and requires a full written submission, in addition to the attached checklist, to demonstrate how the employee meets the requirements. Transition will only occur following approvals from the Science Team Lead and Director, Centre for Accelerator Science.

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

Band 6

1. PhD (or equivalent experience) in Chemistry, Physics, Biology, Materials Science, Engineering, or a related discipline.
2. Post-doctoral (or similar/equivalent) experience in a relevant area physical sciences or applied research.
3. Experience with ion beam analysis, ion beam modification of materials, ion beam irradiations, or accelerator mass spectrometry.
4. Experience with the design, construction, or operation of complex research equipment, including systems involving high voltage, high vacuum, beam delivery, or radiation detection.
5. Ability to troubleshoot and resolve technical issues on complex instrumentation in real time.

6. Demonstrated sound contribution to scientific research, including publications, reports, or development of experimental techniques.
7. Excellent interpersonal and communication skills to work collaboratively and share knowledge with users, peers, and collaborators.
8. Capability to communicate scientific and technical information clearly in a research or facility environment, including participation in conferences or workshops.
9. Ability to work independently and able to plan and manage time to meet deadlines and objectives.
10. Strong customer focus and ability to work productively in a user-facing scientific facility.
11. Demonstrated ability to follow relevant safety, quality, and operational procedures.
12. Personal attributes that support safe, inclusive, and high-performance team culture.

Band 7:

In addition to the required knowledge skills and experience above the Band 7 level will require:

1. Substantial post-doctoral experience in the execution and research applications of accelerator science.
2. Extensive experience as an accelerator scientist undertaking experiments, supporting users, and providing data analysis in accelerator science research;
3. Experience supporting user community including ensuring user and facility safety and regulatory compliance, and mentoring, coaching, and training users and other researchers;
4. Demonstrated major contribution to research which has generated substantial new ideas, interpretations or critical findings and makes a significant and recognised contribution to knowledge or its application. Extensive track record of publications in refereed journals of medium-to-high ranking;
5. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with users and other stakeholders coupled with ability to develop and maintain collaborative relationships;
6. Well-developed capability to communicate science effectively at the international level through conferences and workshops;
7. Ability to work independently and able to plan and manage time to meet deadlines and objectives.
8. Strong stakeholder 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;
9. Demonstrated ability to follow policy, procedures, and guidelines;
10. 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:		Name:	Ceri Brenner
Title:	Science Team Lead (IBM, Irradiations, AMS Radiocarbon, AMS Cosmogenic and Actinide)	Title:	Director, Centre for Accelerator Science
Signature:		Signature:	
Date:		Date:	

Accelerator Science Scientist (PD-2664) Band 6 to Band 7 Transition Checklist	
Name:	
Commencement Date:	
Assessment Date:	

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

a) Extensive experience working as Accelerator Science Scientist (Band 6) OR b) Extensive equivalent experience in accelerator science	☐ Yes ☐ No OR ☐ Yes ☐ No
Higher degree by research or equivalent (Phd plus relevant research track record).	☐ Yes ☐ No
Extensive experience with accelerator-based science and demonstrate meeting all below requirements	☐ Yes ☐ No

Demonstrated ability to independently and consistently perform Band 7 accountabilities and apply required knowledge, skills and experience for the Band 7 position including:	
Undertake Band 6 accountabilities at a expert level with minimal supervision	☐ Yes ☐ No
Leads user projects from proposal through to delivery and publication	☐ Yes ☐ No
Initiates or leads capability development, technical upgrades, or strategic research initiatives	☐ Yes ☐ No
Develops external collaborations, partnerships, or stakeholder relationships to advance CAS objectives	☐ Yes ☐ No
Demonstrates strong scientific output, including contributions to refereed publications and/or national/international presentations	☐ Yes ☐ No
Mentors or supervises junior scientists, postdocs, or students; contributes to training and knowledge transfer	☐ Yes ☐ No
Provides leadership in facility planning, operational improvement, or strategic direction-setting	☐ Yes ☐ No
Promotes a collaborative, safety-focused and high-performance team environment	☐ Yes ☐ 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-2664 and certify that the employee meets all requirements for transition and recommend transition from Band 6 to Band 7 be endorsed as demonstrated in the attached written submission detailing how the employee meets each of the requirements.

Name & Title:			
Signature:		Date:	

Director, Centre for Accelerator Science

I have reviewed all information and approve transition from Band 6 to Band 7.

Name & Title:			
Signature:		Date:	

Effective date of transition:	
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