Australian Government

Nuclear-based science benefiting all Australians

POSITION DESCRIPTION

Position Title:	Senior Beamline Scientist
Cluster / Business Unit / Division	Nuclear Science & Technology and Landmark Infrastructure – Research Infrastructure
Section or Unit:	Australian Synchrotron – Science Team
Classification:	Band 7
Position Description Number:	PD-1917
Work Contract Type:	Science / Research

POSITION PURPOSE

The Senior Beamline Scientist is a science expert within a beamline group of the Australian Synchrotron Science division. The role applies significant scientific expertise and experience to the operation, maintenance and development of synchrotron beamlines within their beamline group, as well as research, industry engagement and outreach activities. The role fosters excellent engagement with other members of the Beamline Group, the Science Team and other operational teams across the facility. The role will be required to understand the capabilities, techniques and instrumentation within the beamline group and apply expert knowledge to enable the best possible scientific outcomes. The role has significant input into scientific development at the Australian Synchrotron through strategic planning and contributions to the planning for new beamlines.

ORGANISATIONAL ENVIRONMENT

ANSTO is the national organisation for nuclear science and technology. We focus on undertaking leading-edge research, delivering innovative scientific services, and providing specialised advice to government, industry, academia, and other research organisations.

Nuclear Science & Technology and Landmark Infrastructure (NSTLI) incorporates ANSTO's research, innovation, landmark research infrastructure, and associated platforms and capabilities. NSTLI 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 Australian Synchrotron provides world-leading technical capability, and the nucleus around which new science and industry networks form as researchers interact. The synchrotron delivers better and faster experimental 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 its regional neighbours.

The Science Team provides world-class user service and synchrotron expertise to Users of the Australian Synchrotron, including academic-based researchers, commercial and industry clients. This includes ensuring delivery of support to users through a range of services and support for access to the operational beamlines within the facility. Members of the Science Team collaborate with other ANSTO teams to maintain world-class beamlines and to develop new capabilities and systems (including new beamlines for the facility). They achieve high impact research outcomes in line with ANSTO's research mission and through collaborations with the Australian Synchrotron User Community. Science Team members also deliver highly effective outreach and training outcomes to promote the capabilities and achievements of the facility.

ACCOUNTABILITIES & RESPONSIBILITIES

- Utilise significant specific knowledge and expertise to provide advanced scientific and technical support, advice and training to national and international synchrotron beamline users, including the making of scientific and technical decisions, ensuring outcomes from allocated beam-time are maximised and the user experience is optimal;
- Reduce and correct user data and provide advice or further data processing and interpretation;
- Liaise with the Australian and international scientific community to develop the user base for synchrotron research to ensure maximum usage of equipment, develop the community of collaborators and users, and maximise revenue;
- Maintain and apply knowledge of industry best practice and technological developments to ensure synchrotron beamlines are improved and upgraded and kept at state-of-the-art to remain internationally competitive. Develop the capability to recognise and act upon opportunities arising from a global view of techniques enabled by the beamline;
- Contribute expert knowledge to facilitate the beamline's Asset Management Plan, which includes maintenance, calibration, documentation, and substantial collaborations with the AS Engineering, and Controls & Computing teams;
- Apply extensive experience to initiate and lead beamline development activities and projects across the Beamline Group to improve and expand capabilities for research and industrial applications. Apply for alternative sources of funding for development activities. Contribute expertise and knowledge to the development of plans and processes for the installation of new beamlines, facilities and capabilities;
- Undertake Industry Engagement activities within the Beamline Group to enable the delivery of optimal outcomes to Industry and Commercial clients to meet revenue targets whilst enhancing the Australian Synchrotron's reputation. Use expert knowledge to promote techniques, capabilities and applications to industry and commercial clients to identify industry leads and convert them to opportunities and contracts;
- Promote and develop outreach activities within the Beamline Group, and on behalf of the Australian Synchrotron 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 local, national, and international scientists to produce research outcomes captured in leading international journals and other reputable publications, and to increase usage of Australian Synchrotron facilities;
- Initiate and conduct leading-edge research of international standard which increases the capacity for beamline usage and understanding, and improves scientific visibility of the profile and facilities of the Australian Synchrotron through conversion of results into publications in leading journals. Deliver research and development which is aligned with customer and stakeholder needs;
- Ensure appropriate policy, procedures, and guidelines are adhered to associated with the beamline and facility in particular in relation to WHS, radiation safety and plant/equipment;
- Coach, and mentor, researchers, post-doctoral fellows and students (as the opportunity arises) in both their use of synchrotron techniques and in their broader research. Collaborate with colleagues within the AS Beamline Groups. Work collaboratively to share scientific expertise and contribute to the research culture within the Australian Synchrotron, NSTLI and ANSTO;
- Undertake specific "beamline responsible" duties, commensurate with skills and expertise, as assigned/delegated by the Manager;
- 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 NSTLI strategy and Australian Synchrotron 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 of the beamline 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.
- 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 leading national and emerging international reputation for high-quality application of synchrotron 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 significant research outcomes while not jeopardising the key priority of delivering quality experience for Australian Synchrotron users.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Line Manager	• Receive guidance and direction • Provide expert advice and recommendations • Report on compliance of facility • Collaborate on plans and activities for beamlines and related matters • Recommend and gain approval for beamline modifications, enhancements and improvements, and process/procedure changes or improvements • Escalate issues and propose solutions
Work-area team members – Beamline Group	• 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
AS Engineering, Controls & Computing and sample environment staff and other support roles	• Contribute to facilitate the beamline's Asset Management Plan and day to day operations, which includes maintenance, calibration and documentation. • Collaborate and plan to manage technical maintenance and development activities • Collaborate on facility and experiment requirements • Liaise to determine faults, troubleshooting and repairs

NSTLI Researchers and Scientists, and other ANSTO staff utilising facilities	• 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 • Ensure safety and regulatory compliance • Provide training and supervision while working in and operating synchrotron beamlines / facility • Provide coaching and mentoring in use of synchrotron techniques and in broader research • Collaborate and share information • Build and maintain relationships
External	
Beamline Users from 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 and supervision while working and operating synchrotron beamline/facility • Provide coaching and mentoring in use of synchrotron techniques and in broader research • Ensure safety and regulatory compliance • Collaborate and share information • Build and maintain relationships
International synchrotrons and research organisations	• Develop and maintain international linkages around synchrotron scientific operations and research
Suppliers and contractors	• To ensure effective beamline development; project management and procurement requirements • Contractor supervision

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Manager, XYZ Beamline Group (where position has been implemented), otherwise, Reports to the Principal Beamline Scientist (pre-restructure)
Direct Reports	None
Indirect Reports	None

Special / Physical Requirements	
Location:	Clayton Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Frequent travel to ANSTO sites within Australia Frequent 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) Public speaking Wearing personal protective equipment for the handling of hazardous and/or radioactive materials

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 Perform duties with and in an area where hazardous chemicals or 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 Obtain and maintain appropriate federal government clearance

Workplace Health & Safety	
Specific role/s as specified in AG-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

TBA

KNOWLEDGE, SKILLS AND EXPERIENCE

1. PhD in Chemistry, Physics, Biology, Materials Science, Engineering, or a related discipline;
2. Substantial post-doctoral experience in execution and research applications of synchrotron infrared or X-ray scattering science;
3. Extensive experience as a beamline scientist undertaking experiments, supporting users, and providing data analysis in synchrotron infrared or X-ray scattering research;
4. Experience supporting user community including ensuring user and facility safety and regulatory compliance and mentoring, coaching, and training users and other researchers;
5. 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. Significant track record of publications in refereed journals of medium-to-high ranking;
6. 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;
7. Well-developed capability to communicate science effectively at the international level through conferences and workshops;
8. Ability to work independently and able 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 multi-cultural environment, and develop and maintain productive working relationships;
10. Demonstrated ability to follow policy, procedures, and guidelines;
11. 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 James	Name: Andrew Peele

Title:	Senior Principal Scientist - Australian Synchrotron	Title:	Director, Australian Synchrotron
Signature:		Signature:	
Date:		Date:	