Australian Government

ANSTO
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# POSITION DESCRIPTION

| | |
|---|---|
| **Position Title:** | Beamline Scientist / Senior Beamline Scientist |
| **Cluster / Business Unit / Division** | Nuclear Science & Technology |
| **Section or Unit:** | Australian Synchrotron – Science Team |
| **Classification:** | Band 6/7 Linked |
| **Job Family:** | Science / Research |
| **Position Description Number:** | PD-2216 |
| **Work Contract Type:** | Professional |
| **STEMM/NON-STEMM:** | STEMM |

## POSITION PURPOSE

The position of Beamline Scientist / Senior Beamline Scientist is within a beamline group of the Australian Synchrotron Science division. The role applies scientific / 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 Beamline Scientist / Senior Beamline Scientist fosters excellent engagement with other members of the Beamline Group, the Science Team and other operational teams across the facility. They will be required to develop knowledge of / understand the capabilities, techniques and instrumentation within the beamline group to enable the best possible scientific outcomes. The position provides input / significant input into scientific development at the Australian Synchrotron through strategic planning and contributions to the planning for new beamlines. The Senior Beamline Scientist will apply expert knowledge to enable the best possible scientific outcomes.

## 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 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 opens-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**

**Key Accountabilities - Band 6**

- Provide 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 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;
- Develop knowledge of industry best practice and technological developments to contribute to improvement of the synchrotron beamline and associated facilities;
- Contribute to facilitate the beamline's Asset Management Plan, which includes maintenance, calibration, documentation, and collaborations with the AS Engineering, and Controls & Computing teams;
- Apply experience to beamline development activities and projects across the Beamline Group to improve and expand capabilities for research and industrial applications;
- 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;
- 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 and national scientists to produce research outcomes captured in international journals, and to increase usage of Australian Synchrotron facilities;
- Undertake research which increases own capacity for beamline usage and understanding and improves scientific visibility of the profile and facilities of the Australian Synchrotron. 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;
- Work collaboratively to share scientific expertise to contribute to the research culture within the Australian Synchrotron, NST and ANSTO;
- Undertake specific beamline responsibilities as assigned by the Beamline Group Manager;
- Undertake additional duties as required and during periods of leave of other staff.

**Key Accountabilities - Band 7**

- Undertake all Band 6 accountabilities at a technical expert level and independently without substantial supervision or guidance;
- Utilise significant specific knowledge and expertise to provide advanced scientific and technical support, advice and training to national and international synchrotron beamline users;

- 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;
- Apply extensive experience to initiate and lead beamline development activities and projects across the Beamline Group;
- Use research networks to coordinate and collaborate with local, national, and international scientists to produce research outcomes captured in leading international journals;
- 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;
- 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;
- Undertake specific "beamline responsible" duties, commensurate with skills and expertise, as assigned/delegated by the Manager.

**Decision Making**

- The ANSTO values, organisational corporate plan, business plan, operational excellence program, the NST 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 and outcomes for Australian Synchrotron users and industry clients.

**KEY RELATIONSHIPS**

| Who | Purpose |
|---|---|
| **Internal** | |
| Line Manager | • Receive guidance and direction<br>• Provide expert advice and recommendations<br>• Report on compliance of facility<br>• Collaborate on plans and activities for the instrument/s and related matters |

| | |
|---|---|
| | • Recommend and gain approval for beamline modifications, enhancements and improvements, and process/procedure changes or improvements<br>• Escalate issues and propose solutions |
| Work-area team members | • Provide advice, analysis, and recommendations<br>• Contribute to group-decision-making processes, planning, and goals<br>• Collaborate and share accountability, information, ideas, and workloads<br>• Negotiate and resolve conflicts<br>• 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.<br>• Collaborate and plan to manage technical maintenance and development activities<br>• Collaborate on facility and experiment requirements<br>• Liaise to determine faults, troubleshooting and repairs |
| NST Researchers and Scientists, and other ANSTO staff utilising facilities | • Facilitate, plan, and manage experiments, advise on data processing, analysis, and interpretation where required<br>• Understand user requirements and desired outcomes<br>• Provide expert advice, analysis, and results interpretation<br>• Ensure safety and regulatory compliance<br>• Provide training and supervision while working in and operating synchrotron beamlines /facility<br>• Provide coaching and mentoring in use of synchrotron techniques and in broader research (**Band 7 only**)<br>• Collaborate and share information<br>• 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<br>• Understand user requirements and desired outcomes<br>• Provide expert advice, analysis, and results interpretation<br>• Provide training & supervision while working and operating synchrotron beamlines/facility<br>• Provide coaching and mentoring in use of synchrotron techniques and in broader research (**Band 7 only**)<br>• Ensure safety and regulatory compliance<br>• Collaborate and share information<br>• 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<br>• Contractor supervision |

**POSITION DIMENSIONS**

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

| **Financial Data** | |
|---|---|
| Revenue / Grants | - |
| Operating Budget | - |
| Staffing Budget | - |
| Capital Budget | - |
| Assets | - |

| **Special / Physical Requirements** | |
|---|---|
| Location: | Clayton<br>Working in different areas of designated site/campus as needed |
| Travel: | May be required travel to ANSTO sites from time to time<br>Frequent travel to ANSTO sites within Australia<br>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)<br>Public speaking<br>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<br>Perform duties in an area where radioactive materials are handled under tightly controlled safety conditions<br>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<br>After hours work may be required for short and infrequent periods |
| Clearance requirements: | Satisfy ANSTO Security and Medical clearance requirements<br>Obtain and maintain appropriate federal government clearance |

| **Workplace Health & Safety** | |
|---|---|
| Specific role/s as specified in AP-2362 of the ANSTO WHS Management System | All Workers<br>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**

***Beamline Scientist - Band 6***

1. PhD in Chemistry, Physics, Biology, Materials Science, Engineering, or a related discipline;
2. Post-doctoral (or similar) experience in execution and research applications of X-ray or neutron science or relevant area of research;
3. Experience as a beamline/instrument scientist undertaking experiments, supporting users, and providing data analysis in X-ray and/or neutron techniques;
4. Demonstrated sound contribution to research within the discipline which has made a recognisable advancement of knowledge or its application at a national level and solid track record of publication;
5. Excellent interpersonal and communication skills to work collaboratively and willingly share knowledge and information with users and other stakeholders;
6. Ability to work independently and able to plan and manage time to meet deadlines and objectives;
7. 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;
8. Demonstrated ability to follow policy, procedures and guidelines;
9. Personal qualities that will add value to a team operating in a high-level client/user, safety and quality environment.

***Senior Beamline Scientist - Band 7***

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 based science;
3. Extensive experience as a beamline scientist undertaking experiments, supporting users, and providing data analysis in synchrotron infrared or X-ray based research;
4. Extensive experience supporting the 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.

**Linked Role Transition**

Transition to the higher band within the linked role is not automatic and ability to perform Band 7 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.

The written submission to include the following:

- Description of experience and expertise in provision of world class user support.

- Description of major beamline / instrument development projects or maintenance activities led by the applicant, with statement of improved capabilities for experimental outcomes. This could include instrument controls or data analysis software development.
- Description of commercial clients secured through outreach delivered by the applicant; revenue generated and associated translational research outcomes. (If an NDA is in place, please refrain from using the client's name or specifics of the work undertaken).
- Research outcomes and leadership: Co-authored journal articles; graduate students supervised; successfully funded research grants.
- Outreach activities: Invited or keynote presentations; contributed oral presentations or seminars; workshops or conferences organised; beamline training workshop organised or delivered.
- Other activities that support organisational safety, diversity & inclusion, and operation outcomes

**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.

| **Senior Manager** | | **Delegated Authority** | |
|---|---|---|---|
| Name: | Danielle Martin | Name: | Michael James |
| Title: | A/Senior Principal Scientist | Title: | Director, Australian Synchrotron |
| Signature: | | Signature: | |
| Date: | | Date: | |

# Assessment Proforma

| Beamline Scientist/Senior Beamline Scientist (Band 6 to Band 7) Transition Checklist | |
|---|---|
| Name: | |
| Employee Number: | |
| Beamline Group: | |
| Line Manager: | |
| Band 6 Commencement Date: | |
| Assessment Date: | |

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

**Review Criteria - (Assessed by Applicant's Line Manager):**

| Requirements for transition | Met Criteria |
|---|---|
| Minimum 12 months successfully working as Beamline Scientist (Band 6, Level 5) and will need to complete a portfolio of demonstrated outcomes to support a recommendation from their Line Manager | ☐ Yes ☐ No |
| Extensive experience operating within an Australian Synchrotron Beamline Team and demonstrate meeting all below requirements | ☐ Yes ☐ No |

| **Demonstrated ability to independently and responsibly perform band 7 Senior Beamline Scientist accountabilities and apply required knowledge, skills, and experience for the band 7 position including:** | |
|---|---|
| Undertake band 6 accountabilities at a technical expert level and independently without supervision or guidance | ☐ Yes ☐ No |
| 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 | ☐ Yes ☐ No |
| Initiate and lead beamline development activities and projects across the Beamline Group to improve and expand capabilities for research and industrial applications, requiring substantial collaboration with other departments (e.g. Engineering, Controls and Computing, or User Office) | ☐ Yes ☐ No |
| Application of specialist technical and scientific knowledge and expertise to examine, interpret, check, and validate methods and results to provide scientific analysis and accuracy of results | ☐ Yes ☐ No |
| Troubleshoot beamline systems and investigate and resolve complex problems that require a holistic view of the beamline | ☐ Yes ☐ No |
| Provision of technical leadership, coaching, mentoring, and demonstrating best practice to other beamline scientists and/or staff within the facility | ☐ Yes ☐ No |
| Promotion of teamwork, knowledge sharing, and a collaborative and user focussed working environment | ☐ Yes ☐ No |
| Collaboration and exchange of information with beamline scientists and groups at international synchrotron facilities | ☐ Yes ☐ No |
| Use research networks to coordinate and collaborate with local, national, and international scientists to produce research outcomes captured in leading international journals | ☐ Yes ☐ No |
| Contribute expert knowledge to ANSTO in the form of accessible documentation. This includes procedures, technical protocols, log entries, etc | ☐ Yes ☐ No |
| Provide a written portfolio referenced in Linked Role Transition requirements. | ☐ Yes ☐ No |

**Line Manager Recommendation**

I have reviewed the employee's competence in accordance with Linked Role PD-2216 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.

**Additional comments:**

| | | | |
|---|---|---|---|
| Name & Title: | | | |
| Signature: | | Date: | |

**Australian Synchrotron Senior Principal Scientist**

I have reviewed all information and approve transition within the linked role from Band 6 to Band 7.

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

**Approval by Director, Australian Synchrotron**

| | | | |
|---|---|---|---|
| Name & Title: | | | |
| Signature: | | Date: | |