

POSITION DESCRIPTION

Position Title:	Accelerator Physicist
Cluster / Business Unit / Division	NSTLI - Clayton Campus
Section or Unit:	Accelerator Physics and Operations
Classification:	Band 6
Position Description Number:	PD-1831
Work Contract Type:	Research, Technical

POSITION PURPOSE

The Accelerator Physicist will support the development of the operations and use for research of the accelerator systems to maintain the Australian Synchrotron's world class status and promote collaborations within the scientific community.

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.

The Australian Synchrotron (AS) is a division within the Australian Nuclear Science and Technology Organisation (ANSTO) and one of the nation's premier science facilities that provides a vibrant focal point for researchers from Australia, NZ and further afield. The facility provides world-leading technical capability that delivers better and faster experimental techniques that enhance current fundamental and applied research. The facility promotes international collaboration to enable leading-edge R&D that will greatly benefit Australia and our regional neighbours.

The Accelerator Physics and Operations group is responsible for the operation, maintenance and development of the accelerator systems and performs research and development aimed at improving their reliability and performance.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Provide advice to the Group leader and other staff on the operation of key accelerator systems and identify areas for improvement to ensure it meets its scientific objectives of providing high quality beam to users
- Contribute to the overall research goals of the group and accelerator Physics community by performing experiments to generate technical reports and conference contributions and contribute to the increase in capabilities of the group
- Manage development projects to increase the accelerator system capabilities, ensuring that the Australian Synchrotron accelerator systems remain world class.
- Form scientific collaborations with academic partners and the Accelerator Physics community to enhance the standing of the Australian accelerator science community
- Undertake additional duties as required and during period of leave of other staff

Decision Making

- Personal research direction and priorities. (no policy/guidelines)
- Determining the settings of operational systems in response to changes in performance. (Sometimes there are guidelines or manuals to follow, but often decision is based on overall knowledge of the system and how it will interact with other systems in the facility.)
- First response directions to operators during a system fault in the absence of manager (some guidelines exist, but often situations are novel and require a prioritized approach)
- 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

- The role is often in competition with others for funding and priority of resources.
- The role may be required to pursue avenues of research without guarantee of outcomes or change to another avenue of research and requires flexibility in approach.
- Machine development time is often scheduled outside of standard business hours and can present work week scheduling issues.
- Keeping abreast of recent developments in field, ensuring continual improvement and implementation of best practise.
- Balancing User beam requirements with scientific research and development project progress.
- The accelerator systems are all interconnected and changes in one areas can have unforeseen consequences further down the line. A holistic view of the facility, including knowledge of how the beamlines work, is required to ensure quality beam is maintained
- Ensuring the successful completion of projects and tasks whilst managing conflicting priorities and deadlines

KEY RELATIONSHIPS

Who	Purpose
Internal	
Head of Accelerator Science and Operations	• Daily to weekly to discuss strategy and update on progress of strategic initiatives
Accelerator Science and Operations Group	• Weekly meeting to discuss group activities and monthly meetings to discuss strategy
External	
Australian Collaboration for Accelerator Science, ACAS	• As required to participate in ACAS activities to promote Australian Accelerator Science
Other research laboratories	• Occasionally, including international yearly trips, to promote the Australian Synchrotron internationally and stay abreast of developments in the field of accelerator physics

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Manager, Accelerator Physics
Direct Reports	Nil
Indirect Reports	Nil
Financial Data (2017/2018)	
Revenue / Grants	
Operating Budget	

Staffing Budget
Capital Budget
Assets

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 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 Industrial facility physical requirements (lifting, standing for long periods, operating machinery, equipment and manipulators) Wearing personal protective equipment for the handling of hazardous and/or radioactive materials Working in confined space environment including wearing respiratory equipment
Radiation areas:	May be required to work in radiation areas under tightly regulated 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 <u>AG-2362</u> of the ANSTO WHS Management System	All Workers Officer (definitions found in appendix 1 of AG-2362) Group Executive / General Manager Managers / Leaders / Supervisors Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties
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ORGANISATIONAL CHART

Ref published Organisation Chart

KNOWLEDGE, SKILLS AND EXPERIENCE

Essential

1. A Ph.D in a relevant field (physics or a physical science)
2. Experience in academic and or research environments
3. Ability to maintain and develop technical systems
4. Working knowledge of relevant techniques, equipment and control systems
5. Effective advocate for the vision and values of the Australian Synchrotron
6. Effective communication skills and proven ability to liaise with people at all levels, and prepare reports, technical notes etc

Desirable

1. Expert in relevant data processing and analysis software such as 2D and 3D Electromagnetic simulators, Matlab, lattice design software, Geant
2. Scientific competence and the ability to collaborate with other scientists
3. Strong organisational and time management skills

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:	Rohan Dowd	Name:	Andrew Peele
Title:	Manager, Accelerator Physics	Title:	Director, Australian Synchrotron
Signature:		Signature:	
Date:		Date:	