



## POSITION DESCRIPTION

<b>Position Title:</b>	CAS Chemistry Engineering Technician
<b>Cluster / Business Unit / Division</b>	Nuclear Science and Technology
<b>Section or Unit:</b>	Centre for Accelerator Science
<b>Classification:</b>	Band 4
<b>Job Family:</b>	Science
<b>Position Description Number:</b>	PD-2317
<b>Work Contract Type:</b>	Technical
<b>STEMM/NON-STEMM:</b>	STEMM

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### POSITION PURPOSE

The CAS Chemistry Engineering Technician ensures safe and efficient operation of CAS chemistry laboratory equipment and process lines through delivery of maintenance and development activities. The role provides support to the CAS Chemistry Group on technical aspects of management of this equipment, assists with planning for new development and upgrade projects in sample processing equipment, specifically for automation, and is responsible for the implementation, installation, and commissioning of technical aspects of these projects.

### 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 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 Centre for Accelerator Science (CAS) is a multi-disciplinary team of scientists and engineers supporting academic and industry users across Australia and the world with a suite of ion beam accelerator instrumentation for ultra-sensitive analysis and irradiation applications. The facility informs policy, provides critical services for IAEA, and enables discovery and innovation in areas such as environment, climate and health sciences, space technologies, advanced energy, nuclear and quantum materials, and cultural heritage.

CAS offers accelerator mass spectrometry, sample processing and preparation, ion beam analysis, ion beam implantation, and ion beam irradiation - together in one centre - backed by decades of accumulated experience in accelerator science and in maintaining complex accelerator systems.

CAS capabilities deliver:

- Ultra-sensitive analysis via a suite of radioisotope dating, trace element and actinide isotope analytical techniques.
- Precision irradiation via a suite of ion beam irradiation modalities covering a wide range of tasks including material doping, nanostructure fabrication, bulk or surface material modification, advanced material and device fabrication, or radiation testing.
- End-to-end user provision including consulting, experiment design, sample preparation, sample analysis, and results interpretation.

## **ACCOUNTABILITIES & RESPONSIBILITIES**

### **Key Accountabilities**

#### ***Safety Compliance***

- Safely plan, risk assess and conduct all work in accordance with relevant safety standards and guides, including the ANSTO Guide on WHE Accountabilities, Responsibilities and Actions (AP-2362).
- Contribute to safety inspections, reviews, and development of safety compliance documentation under guidance of AMS Chemistry Specialists and AMS Scientists.

#### ***Maintain sample processing equipment***

- Maintaining operation and availability of existing CAS Chemistry sample processing lines and equipment using technical knowledge to calibrate, perform preventative routine maintenance, diagnose, and repair faults followed by testing and returning to service.

#### ***Maintenance scheduling***

- Ensure CAS Chemistry equipment and process lines are maintained through administering CAS Chemistry equipment maintenance and servicing schedule.

#### ***Restocking***

- Maintaining stock of critical components, materials, and consumables to ensure that repairs, maintenance and general operations can be conducted on demand.

#### ***Design and construct new equipment***

- Work with AMS Scientists to assist with the design, construction and implementation of new or enhanced chemistry process lines and equipment, through computer-controlled automation of electronics, vacuum systems and gas handling systems.

#### ***Technical drawings and reports***

- Providing engineering reports and drawings for new equipment designs to Australian Standards using approved design software.

#### ***Ensure provision of services and utilities***

- Assist with the planning and procurement of services and utilities to support new or enhanced CAS Chemistry process lines and equipment, with specific emphasis on the power, water, vacuum, gas supply and air conditioning requirements.

#### ***Communications***

- Contribute effectively to group planning activities, meetings discussions, and the open communication of technical development, safe operation, and maintenance information.
- Contribute to CAS ASD technical forums and meetings.
- Providing technical supervision to contractors and facility users

#### ***Recommissioning equipment***

- Recommissioning and recalibrating CAS Chemistry laboratory equipment after relocation or modification.

### **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 limited independence in determining how to achieve objectives of the CAS work area.
- Decisions on work schedules and task priorities for this position will be governed by the CAS Accelerator schedule, ANSTO Research Portal commitments and the CAS business plan.
- Decisions on sample process line development design choices will be made based upon the experience and expertise of the role holder under guidance of the AMS Specialists and Senior Research Officers.
- The position holder will utilise judgement to prioritise conflicting key work activities allocated from the agreed CAS Chemistry schedule with guidance from the CAS Chemistry Group Lead and AMS Chemistry Specialists.

- The position holder will liaise with other group members to manage work priorities impacted by variations in other components of the CAS Chemistry work schedule.
- The position is required to ensure that technical decisions are based on sound evidence and at times may be required to consult with experts or in their absence, apply best at hand solutions to deal with emergency breakdowns.
- 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

- Managing work tasks in a context of changing deadlines, tight timeframes, and conflicting priorities to enable CAS Chemistry objectives to be met.
- Pro-actively keeping up to date with changes to new technology and practices relevant to AMS Chemistry sample processing uplift and automation.
- The ability to draw knowledge, experience, and technical support from other technicians / skill areas.
- Ensuring clear interpretation and understanding of internal client requests and needs.
- Being pro-active, deadline driven and reliable in following through with actions.
- Meeting needs of multiple stakeholders and adjusting work plans and processes, often at short notice, to meet user and operational requirements.

### KEY RELATIONSHIPS

Who	Purpose
<b>Internal</b>	
CAS Chemistry Group Lead	<ul style="list-style-type: none"> <li>• Receive guidance and direction.</li> <li>• Provide advice and recommendations on AMS sample processing equipment maintenance and development.</li> <li>• Recommend and gain endorsement for plans, goals, priorities, and other initiatives.</li> </ul>
CAS Chemistry work team	<ul style="list-style-type: none"> <li>• Contribute to group decision making processes, planning and goals.</li> <li>• Collaborate and share ideas and accountability.</li> <li>• Negotiate and resolve conflicts in prioritisation and planning.</li> </ul>
ASD	<ul style="list-style-type: none"> <li>• Collaborate and share ideas and accountability.</li> </ul>
CAS Scientists	<ul style="list-style-type: none"> <li>• Liaise regarding scheduling, prioritisation &amp; management of planned developments.</li> <li>• Collaborate in relation to maintenance &amp; repair schedule to ensure high equipment availability/</li> <li>• Establish and maintain ongoing open communication to ensure end products meet needs and user requirements.</li> </ul>
AME contract supervisors and planners	<ul style="list-style-type: none"> <li>• Liaise regarding scheduling, prioritisation &amp; management of planned developments.</li> </ul>
<b>External</b>	
CAS facility users, students, and other outreach personnel	<ul style="list-style-type: none"> <li>• Monitor equipment performance and availability</li> <li>• Communicate and collaborate to ensure end product matches user needs</li> <li>• Provide technical advice and assistance</li> </ul>

Suppliers and contractors	<ul style="list-style-type: none"> <li>• Provide technical advice and supervision</li> </ul>
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## POSITION DIMENSIONS

### Staff Data

Reporting Line	Reports to the CAS Chemistry Group Lead
Direct Reports	Nil
Indirect Reports	Provide technical supervision to contractors, junior staff, and facility users.

### Financial Data (2021/2022)

Revenue / Grants	N/A
Operating Budget	N/A
Staffing Budget	N/A
Capital Budget	N/A
Assets	N/A

### Special / Physical Requirements

Location:	Lucas Heights / Camperdown / Clayton Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Occasional travel to ANSTO sites within Australia 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) Laboratory based physical requirements (long hours standing, frequent manual handling). Industrial facility physical requirements (lifting, standing for long periods, operating machinery & equipment, frequent manual handling, frequent movements) Wearing personal protective equipment for the handling of hazardous and/or radioactive materials.
Radiation areas:	Required to work in radiation areas under tightly regulated 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 <u>AP-2362</u> of the ANSTO WHS Management System	<p>All Workers Officer (definitions found in appendix A of AP-2362)</p> <p>May be required to undertake one or more of the specified roles within the context and course of their duties</p> <ul style="list-style-type: none"> <li>• Area Supervisor</li> <li>• Building Warden</li> <li>• Contractor Supervisor</li> <li>• Designated First Aid Officer</li> <li>• Health and Safety Committee Member</li> </ul> <p>Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties.</p>
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## ORGANISATIONAL CHART

Refer to published Organisational Chart

## KNOWLEDGE, SKILLS AND EXPERIENCE

1. Degree in Electrical or Electronic Engineering or equivalent relevant experience.
2. Significant industrial / scientific experience in electronic and/or electrical instrumentation technology.
3. Some experience of high vacuum system construction / maintenance, computer programming / data logging and chemistry is desirable.
4. Well-developed computing skills with experience using Microsoft Word, Excel and Outlook as well as experience using data logging and instrument control software.
5. Demonstrated ability to diagnose and rectify instrumentation / system faults.
6. Demonstrated ability to read and interpret electrical drawings, schematic diagrams and manuals.
7. Demonstrated ability to install instrumentation and commission systems from engineering drawings.
8. Ability to develop working designs from conceptual ideas and produce engineering drawings for manufacture.
9. Experience producing oral and written reports, instructions and procedures.
10. Strong communication and interpersonal skills and ability to work as part of a team.
11. Demonstrated knowledge of QA Systems and safe work practices

## 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:	David Child	Name:	Dr Ceri Brenner
Title:	CAS Chemistry Group Lead	Title:	Leader, CAS
Signature:		Signature:	
Date:		Date:	

## Appendix 1

<b>ANSTO Job Families</b>
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