Australian Government

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POSITION DESCRIPTION

Position Title:	CAS AMS Radiocarbon Chemistry Team Lead
Cluster / Business Unit / Division	Nuclear Science and Technology / Centre for Accelerator Science
Section or Unit:	AMS
Classification:	Band 6/Band 7
Job Family:	Science
Position Description Number:	PD-2583
Work Contract Type:	Technical/Manager
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Science/Technical

POSITION PURPOSE

The CAS AMS Radiocarbon Chemistry Team Lead is responsible for the leadership, coordination, and development of chemical preparation workflows, laboratory operations, and safety processes that support CAS's radiocarbon accelerator mass spectrometry (AMS) user program. This includes oversight of high-throughput and high-precision workflows, sample integrity and traceability, and development of new or optimised chemical preparation methods for radiocarbon applications.

The role ensures safe, compliant, and reliable delivery of chemical processes underpinning AMS Radiocarbon capabilities and supports the broader CAS user program by enabling analytical and experimental readiness.

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 and Technology (NST) incorporate 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 Centre for Accelerator Science (CAS) is a multi-disciplinary team of scientists, technicians and engineers supporting academic and industry users across Australia and the world with a suite of accelerator instrumentation for ultra-sensitive measurement, analysis and irradiation applications. As a user facility open to all, supported by the National Collaborative Research Infrastructure Strategy, CAS informs policy, provides critical services for IAEA, and enables discovery and innovation in areas such as environment, climate and health sciences, space technologies, advanced materials for energy and quantum, and cultural heritage.

CAS operates four tandem particle accelerators and a wide range of advanced (and often bespoke, inhouse designed) engineering systems, scientific instrumentation, equipment, and technologies across twelve beamlines for accelerator science applications and twelve chemistry laboratories for specialised sample processing. CAS offers accelerator mass spectrometry, sample 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 operations.

The CAS AMS Radiocarbon Chemistry team provides chemical separation, purification, and target preparation workflows for radiocarbon isotopes. This includes implementation of high-compliance protocols, and continuous development of methodologies to enable user throughput, data quality, and future capability. The team operates across a range of wet chemistry, thermal, and analytical techniques, and supports training and development of visiting researchers, students, users and early-career staff. The capability includes specialised skills and facilities dedicated to radiocarbon sample preparation and consist of two ISO 8 clean room standard (Class 100000) laboratories for sample pre-treatment and water sample processing, an ISO 8 equivalent clean laboratory for graphitisation and sample loading, a CO2 combustion and instrumentation laboratory, microgram radiocarbon laser graphitisation, and a low background radiocarbon processing laboratory. Sample processing assets have been developed and expanded consistently over time to increase sample throughput as well as the breadth of applications that can be supported by diversifying the range of sample processing methods.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

Leadership and Management (Band 6)

- Lead and manage the provision of CAS Radiocarbon Chemistry laboratory operations to ensure safe, compliant, efficient, high-quality sample preparation services that underpin CAS's AMS Radiocarbon capability and enable user program delivery.
- Ensure compliance with radiochemical and laboratory safety regulations, ANSTO policies, and operational protocols; develop and implement best-practice systems for safety, traceability, quality control, and waste handling.
- Lead the CAS AMS Radiocarbon Chemistry team to achieve excellence by inspiring an inclusive and innovative environment that promotes psychological safety and builds a learning and growth culture.
- Formulate and prioritise plans and objectives that translate CAS AMS strategy into measurable deliverables for Radiocarbon chemistry capability development and support.
- Report on Radiocarbon Chemistry team performance against delivery metrics and regulatory KPIs; contribute to workforce development plans and continuous improvement initiatives.
- Lead or contribute to capital planning and laboratory infrastructure upgrades, to ensure alignment with CAS operational and scientific requirements, future capability, safety and throughput requirements.
- Drive continuous improvement in chemical workflow and initiate cross-functional collaborations with other CAS capability leads to support integrated delivery and shared platform development, aligned with CAS strategy.
- Represent radiocarbon chemistry operations in internal planning, CAS leadership discussions, and readiness reviews; contribute to investment cases and strategic platform development.
- Support internal training and user education in laboratory procedures, regulatory compliance, and safe use of chemicals and AMS radiocarbon target preparation workflows.

AMS Chemistry Specialist (Band 6)

- Provide specialist sample processing expertise to enable high-quality delivery of AMS Radiocarbon chemistry workflows, contributing to CAS's scientific, user, and operational programs.
- Advise users and researchers on project design and sample preparation strategy, including feasibility, safety, and alignment with AMS Radiocarbon analytical constraints.
- Independently develop and improve methods and techniques for sample preparation across radiocarbon workflows, ensuring high compliance and reproducibility.
- Propose and evaluate upgrades to laboratory infrastructure and instrumentation, contributing to capital planning and workflow innovation.

- Coordinate laboratory planning, capability development activities, and communication of quality control/chemistry performance measurements with the Head of AMS and CAS AMS Radiocarbon Team Lead
- Coach and train technical staff and visiting users on preparation methods, laboratory safety, and quality control procedures.
- Maintain high standards of documentation, safety protocol adherence, and audit-readiness across CAS chemistry labs.
- Represent the AMS Radiocarbon chemistry function in collaborative discussions, planning meetings, and improvement initiatives across CAS.
- Undertake additional duties as required and during periods of leave of other staff

Senior AMS Scientist (Band 7), performing the above at senior specialist level

- Lead the design, implementation and evaluation of complex or high-impact chemical preparation methods that significantly advance CAS AMS capability.
- Lead cross-functional planning initiatives to align Radiocarbon chemistry infrastructure, staffing, and research objectives with CAS-wide delivery and future strategy.
- Actively contribute to strategic documents, investment cases, and capability proposals that position chemistry workflows as a critical enabler of AMS scientific and operational outcomes.
- Identify and implement process innovations that improve efficiency, safety, or scientific value in CAS chemical workflows.
- Represent the AMS Radiocarbon Chemistry capability in investment planning, platform strategy development, and external collaboration or review activities.
- Lead strategic development of novel sample preparation techniques or methodology shifts that significantly expand CAS capability. Establish research plans and secure collaborative or operational support to evaluate and implement new processes that align with CAS and national platform priorities.
- Mentor and coach team members, ensuring effective knowledge transfer, capability uplift, and operational continuity.
- Assess and resolve complex technical issues or compliance challenges, using authoritative judgement and a strong understanding of regulatory and institutional requirements.
- Contribute to platform-level integration of Radiocarbon chemistry with beamline and user delivery workflows, aligning operations with broader CAS objectives.
- Maintain a leadership role in AMS Radiocarbon Chemistry best practice, user engagement, and capability visibility through training, forums, or collaboration.

Decision Making

- The ANSTO values, organisational corporate plan, operational excellence program, NST strategy and CAS business plan provide the context for the position.
- The position holds responsibility for the management of direct reports and the delivery of CAS Radiocarbon Chemistry laboratory operations. This includes planning, prioritisation, safety oversight, regulatory compliance, and performance management aligned to AMS program outcomes.
- Assess desired outcomes and provide advice to internal and external stakeholders and collaborators on the feasibility and methodology for CAS chemistry capabilities to their research projects
- The role exercises independent judgment in technical decision-making related to chemistry method selection, within defined resource and safety parameters.
- The position works within a framework of legislation, ANSTO policies, professional standards and resource parameters. Within this framework, the position will be provided with the parameters in which to operate the facilities including decisions pertaining to project planning and resource

allocation. The position has independence for decision making on methods and approaches for project planning and allocation of resources within CAS AMS Radiocarbon Chemistry and is fully accountable for delivering outcomes within agreed timeframes and budgets.

- The position is fully accountable for the accuracy, integrity and quality of the content of advice provided to users, staff, and CAS Head of AMS and is required to ensure that decisions are based on sound evidence.
- Determine work priorities within the context of agreed work plans and schedules and consult with the CAS Head of AMS on complex, sensitive and major issues that have a significant impact on the facility operations.
- The position will be provided a budget developed by management within the constraints of which the position is expected to operate. The position will have authority to assign and approve expenditure within limits designated by the delegations manual and approve work hours and staff leave requests.
- 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

- Sustaining excellence in CAS AMS Radiocarbon chemistry capabilities and operations as a world-class facility, identifying and prioritising opportunities to advance capabilities, and maintain strong working relationship across engineering, scientific and operational teams to support shared platform goals.
- Keeping pace with emerging technologies, regulatory requirements, innovation in field, ensuring continual improvement and implementation of best practise and future readiness.
- Delivering results and outcomes to the required standards and timeframes, given the need to be agile and responsive to opportunities, and adapt in an often changing and unpredictable environment.
- Understanding the objectives of a wide range of operational needs and capital projects to ensure the provision of expert advice to facilitate successful project outcomes.
- Performing technical work and designing solutions in short or changing timeframes, to ensure maintenance of world leading capabilities of the facility.
- Collaborating across disciplines to ensure safe and effective integration of chemistry workflows into broader accelerator, beamline, and user infrastructure - often under tight shutdown or delivery windows.

KEY RELATIONSHIPS

Who	Purpose
Internal	
CAS Head of AMS (Line Manager)	• Receive direction and guidance • Provide regular updates on key tasks, issues & priorities • Provide expert, authoritative and evidence-based advice • Support and implement staff engagement and quality recruitment • Negotiate and report on budgets and resources consistent with objectives, plans, targets and goals • Staff performance (APEA review of staff) and attendance and instruction on dealing with staff issues or problems • Recommend and gain endorsement for improvement or development plans and goals and other initiatives
CAS Head of Operations	• Ensure safe and compliant operations within AMS sample preparation laboratories

	• Ensure compliance with safety and quality systems and applicable legislation and regulations • Negotiate resourcing for maintenance and development of equipment, laboratories and capabilities • Provide expert knowledge and input for capital development plans and asset management
CAS Management Team (Peers)	• Support team members and work collaboratively to contribute to achieving outcomes • Contribute to CAS decision making processes, planning and goals • Collaborate and share accountability • Negotiate and resolve conflicts
CAS AMS Radiocarbon Chemistry Team (Direct Reports)	• Provide management, guidance and support • Provide coaching, career counselling, mentoring, supervision, instruction, direction, support, recognition, training, and performance and attendance monitoring & review. • Communicate work plans and activities and monitor outputs. • Monitor trends, performance and progress against the operational plans and communicate adjustments to work priorities which may be required to ensure delivery against the plan
CAS AMS Team Leads	• Optimise shared resources, coordinate scheduling, and deliver integrated accelerator science capabilities. • Contribute to group discussions, decision making processes and planning. Participate in meetings, share information and provide input on issues • Collaborate and share accountability • Negotiate and resolve scheduling or lab access conflicts
NST staff (scientists, researchers, post-docs) and staff across ANSTO organisation	• Develop and maintain effective working relationships and open channels of communication • Understand user requirements and desired outcomes • Provide expert advice, analysis and training • Contribute to the preparation of manuscripts for journal publications • Support organisation-wide initiatives, strategic projects, and workgroups
External	
Collaborators from Universities, Industry, National and International Research organisations.	• Ensure CAS Radiocarbon chemistry capabilities are fit for purpose and world class • Provide expert advice, analysis, training, guidance and supervision • Build and maintain relationships and partnerships
Suppliers	• Negotiate specifications and costs for procurement and contracts for service and delivery schedules

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the CAS Head of AMS
Direct Reports	4-5 AMS Chemistry Technicians
Indirect Reports	Nil

Financial Data (2025/2026)

Commercial Revenue / NCRIS Grants	
Operating Budget	$50k
Staffing Budget	$0.6M
Capital Budget	
Assets	

Special / Physical Requirements	
Location:	Lucas Heights Working in different areas of designated site/campus as needed
Travel:	May be required travel to ANSTO sites from time to time Infrequent 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 facility and workshop physical requirements ((lifting, standing for long periods, operating machinery, equipment) Public speaking Wearing personal protective equipment for the handling of hazardous materials
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 Maybe required to 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 Managers / Leaders / Supervisors Other specialised roles identified within the guideline a position holder may be allocated to in the course of their duties

ORGANISATIONAL CHART

On file

KNOWLEDGE, SKILLS AND EXPERIENCE

Band 6

1. Master's degree in Chemistry, Environmental Science or a discipline or equivalent extensive experience managing an analytical or radiochemical laboratory environment.

2. Demonstrated ability to independently deliver high-quality sample preparation services for AMS, including application of established and emerging methods across radiocarbon and actinide workflows.
3. Proven experience developing, improving, and validating sample processing methodologies and laboratory systems in a research or high-compliance environment.
4. Experience planning and prioritising laboratory schedules, coordinating with beamline teams, and aligning operations with broader program requirements.
5. Demonstrated experience maintaining high standards of safety, traceability, and regulatory compliance in radiochemical or analytical chemistry settings.
6. Ability to coach and guide staff and users in laboratory techniques, QA/QC protocols, and safe work procedures.
7. Ability to lead and co-ordinate work activities of other staff to achieve effective outcomes.
8. Demonstrated experience providing technical leadership and coaching to technicians and engineers and external work experience personnel.
9. Demonstrated ability to undertake duties independently and expertly.
10. Strong interpersonal and communication skills with the ability to build effective working relationships and represent the chemistry function in internal working groups

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

1. Demonstrated leadership in planning, design, and implementation of complex or high-impact AMS workflow, radiochemical laboratory workflows supporting AMS research, commercial delivery, and method development.
2. Proven ability to lead a team in a high-compliance environment, ensuring safe operations, traceability, and readiness for external audits or inspections.
3. Recognised technical authority in radiocarbon chemical preparation methods, with a track record of method development or innovation.
4. Demonstrated success managing capital upgrades, infrastructure improvements, or workflow digitisation to support AMS delivery and future capability growth.
5. Experience in representing the chemistry function in cross-functional planning forums and contributing to CAS-wide capability strategy or investment planning.
6. Demonstrated mentoring and development of technical staff, including succession planning, onboarding, and performance support.

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: CAS Head of AMS	Title: Director, CAS
Signature:	Signature:
Date:	Date:

CAS AMS Radiocarbon Chemistry Team Lead - Linked Role (PD-2583)

Band 6 to Band 7 Transition Checklist

Name:	
Commencement Date:	
Assessment Date:	

Note: Full written submission demonstrating and justifying how the employee meets the requirements must also be attached.

Requirements for transition	**Met Criteria**
Demonstrates independent leadership of chemical capability delivery, including method development, compliance assurance, and oversight of infrastructure, systems, and safety protocols.	Yes No
Leads CAS-wide laboratory planning activities and represents AMS Chemistry in cross-functional operational coordination, scheduling, and platform integration.	Yes No
Provides authoritative review of chemical workflows and procedures, ensuring compliance with WHS, radiation safety, and laboratory QA standards.	Yes No
Develops and maintains strategic partnerships or external networks (e.g., peer AMS facilities) and uses learnings to shape capability development.	Yes No
Identifies critical risks in AMS chemistry operations and leads planning and implementation of mitigation strategies, including regulatory and infrastructure risks.	Yes No
Acts as a recognised expert in chemical sample preparation for AMS, delivering novel, high-impact methods to support complex or high-throughput delivery needs.	Yes No
Leads mentoring and capability development of laboratory staff, fostering autonomy, cross-skilling, and a high-performance, safety-conscious team culture.	Yes No
Contributes to CAS-wide strategy and investment planning by advising on chemistry infrastructure needs, capability uplift, and delivery integration.	Yes No

Manager Recommendation:

I have reviewed the employee's competence in accordance with Linked Role PD-2583 and certify that the employee meets all requirements for transition and recommend transition from Band 6 to Band 7 be endorsed.

Manager Name:	
Signature:	
Date:	

General Manager Assessment

I have assessed the submission and confirm that the employee meets all requirements for transition from Band 6 to Band 7.

General Manager Name:	
Signature:	
Date:	