



POSITION DESCRIPTION

Position Title:	Radiochemist (research)
Cluster / Business Unit / Division	Nuclear Science & Technology / Research
Section or Unit:	Human Health
Classification:	Band 6
Job Family:	Research
Position Description Number:	PD-1492
Work Contract Type:	Professional
STEMM/NON-STEMM:	STEMM
STEMM CATEGORY:	Research and Sciences

POSITION PURPOSE

The primary objective of the Radiochemist (Research) is to lead ANSTO Human Health radiochemistry and chemistry projects by designing, developing and undertaking synthesis of new ligands for radiolabelling and radioligand characterisation.

This position requires expertise in organic synthesis, radiolabelling with both PET and SPECT radioisotopes and the use of a wide range of scientific instruments including radio-HPLC's, analytical and preparative HPLCs, radiochemistry automation modules, solvent purification systems, LCMS, automated chromatography systems and fluidic/microfluidic reaction systems. In addition, this position is responsible for project design and supervision of postgraduate and undergraduate students, providing training and expertise/advice in the area of radiochemistry as well as creating and implementing new strategies to improve radiation safety in the laboratory environment.

ORGANISATIONAL ENVIRONMENT

ANSTO leverages great science to deliver big outcomes. We partner with scientists, engineers and clinicians 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.

ANSTO undertakes human health research in collaboration with national and international research organisations, hospitals and the users of ANSTO's research infrastructure. The Human Health research theme includes two programs: (i) Impact of radiation on living systems; (ii) Radiotherapy, theranostics and radiotracers for improving health. The programs inform, complement and reinforce each other and draw from ANSTO's broad range of capabilities and intrinsic strengths.

ACCOUNTABILITIES & RESPONSIBILITIES

Key Accountabilities

- Lead the research and development of new radiolabelled compounds using PET, SPECT and therapeutic radioisotopes by providing innovative and creative solutions. These compounds will be evaluated in clinical and preclinical animal studies.

- Lead the development of new radiochemical practices and procedures, bio-conjugation methods, development of intellectual property and designing and conducting clinical and preclinical animal studies. Develop new methods and use established methods for automated radiochemistry.
- Lead the development of radio-HPLC separations for radiochemistry development.
- Lead the development and design of automated systems for chemistry and radiochemistry to improve safety and increase team productivity and efficiency.
- Lead the development of new research and commercial capabilities that support the growth, development and strategic direction of the Human Health research theme and the organisation.
- Lead and contribute to research projects within the Human Health Research theme, and work as part of a team to complete project experiments within time and scope. Coordinate tasks across both research and platform teams, writing project and experiment proposals, scientific literature reviews, postgraduate and undergraduate student supervision, collation of all data, undertaking of project tasks, delegation of responsibilities, development, reporting and analysis of data, and authoring scientific publications.
- Maintain facilities, capabilities access and associated documentation including:
 - Ensure the radiochemistry laboratory is functioning effectively through delegation of duties, training and good laboratory practices; Supervise postgraduate and undergraduate students in research laboratories.
 - Ensure that capability requirements, in terms of radiochemistry and chemistry instrumentation, are communicated to platform scientists to maintain the needs required for Human Health projects.
 - Manage and maintain quality control and quality assurance practices of all radiochemistry, synthetic chemistry and radiopharmaceutical development.
 - Ensure compliance is maintained with all regulatory practices. Review and recommend changes to practices for improvement so that data collected for research can be validated.
 - Manage and maintain compliance with the WHS program for the laboratory to ensure all staff and visitors are using equipment properly and safely.
 - Write technical reports, standard operating procedures, work instructions, risk assessments and other regulatory required paperwork, including development procedures for equipment usage, experimental practice and validation records and protocols.
- Fulfil responsible officer duties for Building 76 and 16, which includes maintaining radioactive sources, materials and instruments in a secure way, report any movements and manage radioactive sources in conjugation with the ARPANSA licencing officer.
- 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 NST strategy and Human Health objectives provide the context for the position.
- The position works within a framework of legislation, policies, professional standards, strategic and resource parameters. Within this framework the position has full independence in determining how to achieve objectives and recommend this to their line manager for endorsement.
- The position is fully accountable for the accuracy, integrity and quality of the content of advice provided to other researchers both internal and external to ANSTO regarding radiochemistry, ensuring that decisions are based on sound evidence.
- Determine own work priorities, methods and approaches within the context of agreed work plans and will consult with the line managers on issues that have an impact on the projects or associated activities.

- 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

- Keeping abreast of recent developments within the radiochemistry field, ensuring continual improvements and implementation of best practice.
- Working independently on multiple project tasks to ensure all project milestones are met.
- Carrying out work in a highly regulated environment and ensure adherence to all regulations.
- Establish productive working relationships with people of diverse academic backgrounds and varied levels of experience.
- Working in a complex environment, achieving results within tight constraints on time, resources and finances.

KEY RELATIONSHIPS

Who	Purpose
Internal	
Manager	<ul style="list-style-type: none"> • Receive guidance, direction and performance requirements consistent with the business plan and objectives • Provide expert, authoritative and evidence based advice • Recommend and gain endorsement for plans and goals and other initiatives • Provide regular updates on key tasks, and any identified issues
Work area team members (Human Health, Biosciences)	<ul style="list-style-type: none"> • Support team members by provision of radiochemistry expertise and outputs and work collaboratively to contribute to research theme objectives • Provide expert advice and analysis across a broad range of radiolabelling, radiochemistry and separations requirements • Contribute to group decision making processes, planning and goals • Determine work priorities • Identify and resolve conflicting demands on resources
External	
Research Students	<ul style="list-style-type: none"> • Provide supervision, guidance, advice and support • Ensure safety and regulatory compliance
Collaborators and Partners	<ul style="list-style-type: none"> • Ensure effective communication, for project planning and co-ordination of activities • Report on work outcomes, outputs and results

POSITION DIMENSIONS

Staff Data	
Reporting Line	Reports to the Research Program Manager – Human Health
Direct Reports	Nil
Indirect Reports	Nil
Financial Data (2022/2023)	
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 Working in different areas of designated site/campus as needed
Travel:	May be required to travel to ANSTO sites from time to time Operational needs may require temporary assignments at collaborative/partner facilities within Australia and internationally
Physical:	Office and laboratory based physical requirements (sitting, standing, minimal manual handling, movement around office and site, extended hours working at computer) Labour intensive physical requirements (sitting, standing, frequent manual handling) 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.
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	All Workers 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

Refer to published Organisational Chart.

KNOWLEDGE, SKILLS AND EXPERIENCE

1. PhD degree in radiochemistry or chemistry or equivalent experience in a research setting.
2. Extensive expertise working with radiochemistry and chemistry analytical techniques; including radio-HPLC, TLC and SPE, LCMS, HPLC, automated MPLC and NMR spectroscopy.
3. Knowledge and expertise in radiochemistry of PET, SPECT and therapeutic radioisotopes, radiochemistry automation, radiotracer and radio-conjugate preparation and characterisation.
4. Knowledge and expertise with the development radiotracer chemistry of PET, SPECT and therapeutic radioisotopes, drug development, organic synthesis and analytical chemistry.
5. Advanced computer skills associated with scientific instrumentation and data management.
6. Ability to interpret data, communicate research results and contribute to scientific papers.
7. Experience in communicating and working with members of other disciplines, such as biologists and physicists.
8. Strong ability to work collaboratively with others as part of a team.
9. Self-motivated and committed to getting the job done within tight deadlines.
10. Strong ability to conduct non-routine and routine research and, lead projects, designing and executing experiments meticulously and with precision.

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:	TBA	Name:	Ryan Middleton
Title:	Research Program Manager	Title:	Acting Theme Leader, Human Health
Signature:		Signature:	
Date:		Date:	

Appendix 1

ANSTO Job Families
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