UM 2026

Australian Synchrotron
User Meeting

Mon 9 - Tue 10 November 2026

ANSTO

PROGRAM

*Note: Timetable subject to change

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AINSE
THE AUSTRALIAN INSTITUTE OF NUCLEAR SCIENCE AND ENGINEERING

New Zealand Synchrotron Group

ANSTO

User Meeting 2026 Program

Day 1 | Monday, 9 November

Sunday 8th November | Pre-conference welcome event in the NCSS Exhibition Space from 5pm - 7pm

8:00			**Registrations open**	
9:00	Chair: Maggie Zhai		**Welcome & House Keeping**	
9:15			**Plenary Lecture 1 | Mid-career Research Award - Mark Hackett:** *A (Spectroscopic) Picture Paints a Thousand Words: Studying Metal Ion Speciation in Brain Tissue with XANES Spectroscopic Mapping*	
9:45			**Facility update - Danielle Martin, Andreas Moll**	
10:30			*Break (30 mins) & Tunnel Tour*	**TUNNEL TOUR BOOKING**

	NCSS Auditorium			NCSS Seminar Room		
	Chair: Mark Hackett	**Session 1 | Spectroscopy**		Chair: Michael Jones	**Session 2 | Imaging & Microscopy**	
11:00	20	Probing Sub-Nanoscale Catalytic Active Sites for Water and carbon dioxide Electrolysis	Porun Liu	**11:00**	**Beamline Group Workshop** MICROSCOPY	Keith Bambery, Daryl Howard
11:15	46	Promotion on the Understanding and Synthesis of High-Loading Single-Atom Catalysts based on Synchrotron Analysis	Hongzhe He			
11:30	34	Thermal Transformation of Scorodite (FeAsO4.2H2O) During Bushfire-Relevant Conditions: An Impact on Arsenic Transformation and Mineral Stability	Usman Faryad	**11:30**	**Beamline Group Workshop** IMAGING	Adam Round
11:45	127	Transforming ultramafic mine waste into artificial laterites for critical metal recovery and CO2 capture	Jessica Hamilton			

12:00		*Lunch Break (60 mins) & Tunnel Tour*	**TUNNEL TOUR BOOKING**
13:00	Chair: Michael Jones	**Plenary Lecture 2 | Australian Synchrotron Lifetime Contribution Medal - Richard Garrett:** *Lifetime Contribution talk*	
13:45		**AINSE Update - Michelle Durant**	

Day 1 cont | Monday, 9 November

NCSS Auditorium

Session 3 | Diffraction, Scattering & Crystallography

Chair: Michael Jones

14:00	90	Resonant Grazing Incidence Wide-Angle X-ray Scattering of Semiconducting Polymers	Chris McNeill
14:15	12	Using small-angle X-ray scattering to characterise binding of DNA aptamers to small-molecule targets	Bruce Chilton
14:30	13	Modelling the Curvature Tuning Strategy of Monoolein-Based Lipid Nanoparticles by Tricosene Doping: Insights from High-Throughput Synchrotron SAXS	Natinael Koyra
14:45	63	First Contact: Lipid Nanoparticles Orient and Restructure at Interfaces	Brendan Dyett
15:00	10	Decoding protein crystallisation and aggregation in ionic liquids with high-throughput SAXS, GISAXS and machine learning	Hank Qi Han

NCSS Seminar Room

Session 4 | Imaging & Microscopy

Chair: Yameng Fan

57	Progress Towards the World's First Live-Human Synchrotron Breast CT: From Research Platform to Clinical Trial Readiness	Adam Round
4	Dual-sample multimodal X-ray imaging for high-throughput acquisition	Marie-Christine Zdora
100	Enabling Real-Time Patient-Specific Dosimetry for Synchrotron Breast CT: 23-Fold Faster Mean Glandular Dose Estimation	Amir Hassan Entezam
110	Extracting Microstructure Properties by Quantifying the Scattering in X-Ray Dark-Field Images	Caitlyn Smith
102	Understanding diaphragmatic hernias using phase-contrast CT and neural network airway segmentation.	James Pollock

15:15 *Afternoon Tea (30 mins) & Tunnel Tour* **TUNNEL TOUR BOOKING**

NCSS Auditorium

Session 5 | Imaging & Microscopy

Chair: Annette Dowd

15:45	16	The Nanoprobe beamline at the Australian Synchrotron	Cameron Kewish
16:00	47	A new spin on quantitative 3D elemental imaging with laminographic XRF	Nick Phillips
16:15	15	Synchrotron-based X-ray techniques for studies of arsenic distribution and speciation in the novel extremophile nematode Tokorhabditis tufae	Ani Baker
16:30	78	X-ray Fluorescence Diagnostics for Flashing Channel Flows	James Puli

NCSS Seminar Room

Session 6 | Diffraction, Scattering & Crystallography

Chair: Maggie Zhai

15:45 **Beamline Group Workshop** — Helen Brand

DIFFRACTION

Session 7 | Spectroscopy

16:15 **Beamline Group Workshop** — Peter Kappen

SPECTROSCOPY

16:45 *Break (10 mins)*

16:55 **Plenary Lecture 3 | Stephen Wilkins Thesis Medal - Han Wu:** *Understanding Aqueous Battery Chemistry through Operando Synchrotron-Based Characterisation*

Chair: Michael James

17:40 *Finish (20 mins)*

18:00 **BBQ Buffet Dinner on site**

20:00 *Day 1 Close*

Day 2 | Tuesday, 10 November

8:30 — **Town Hall - Michael James**

9:00 — **Plenary Lecture 4 | Early-career Research Award - Yameng Fan:** *Seeing Batteries in Action: Multiscale Mechanistic Insights from Synchrotron Techniques*
Chair: Porun Liu

NCSS Auditorium

Session 8 | Spectroscopy
Chair: Porun Liu

9:30	29	Conversion of Epitaxial Graphene to 2D diamane on Silicon Carbide by Ultra High Vacuum hydrogenation	Nunzio Motta
9:45	75	Ionic Liquid Precursor Films on Graphite: Formation Mechanisms and Interfacial Properties	Sowbarnika Senthilkumar
10:00	119	Deciphering Depth-Dependent Degradation in Layered Oxides with X-ray Spectroscopy	Wesley Dose
10:15	109	Collective dynamics in biological membranes: lessons from a decade of low frequency vibrational spectroscopy	Annette Dowd

NCSS Seminar Room

Session 9 | Diffraction, Scattering & Crystallography
Chair: Maggie Zhai

9:30	**Beamline Group Workshop** Crystallography	Rachel Williamson
10:00	**Beamline Group Workshop** Scattering	Andrew Clulow

10:30 — *Morning Tea (30 mins)*

NCSS Auditorium

Session 10 | Diffraction, Scattering & Crystallography
Chair: Hank Han

11:00	81	Watching hundreds of grains at once: energy-resolved Laue diffraction turns a single exposure into a grain-resolved map of a polycrystal	Jun Wang
11:15	36	Absorption effects on Fluctuation X-ray Scattering	Ryan Hogg
11:30	22	Using in situ synchrotron powder diffraction to study the hydration of Portland cement with seawater CO2 mineralisation precipitate replacement at very early ages	Yue Wang
11:45	73	Fluctuation X-ray scattering as an indexing-free extension of serial crystallography	Alan Salek
12:00	101	Probing Atomic Coordination and Chirality Evolution in Hierarchical Metal–Amino Acid Complexes	Shangcheng Yan

NCSS Seminar Room

Session 11 | Imaging & Microscopy
Chair: Nathan Collins

56	Neural network based 4D CT reconstruction at the synchrotron	Chris Hall
65	Exploring pumice textures through Synchrotron Micro-Computed Tomography	Shannen Mills
83	Beyond Porosity: Synchrotron Micro-CT Characterisation of Multi-Scale Defect Architecture and Fibre–Matrix Interfacial Discontinuities in 3D-Printed Continuous Fibre Thermoplastic Composites	Demeke Abay Ashebir
105	Synchrotron microangiography to assess cerebral haemodynamic responses to delivery-room resuscitation in extremely preterm lambs	Zoe Johnson
111	Enhancing Lung Cancer Diagnostics Through Dynamic Region-of-Interest CT Imaging	Lucy Costello

12:15 — *Lunch Break and **POSTER SESSION** (90 mins)*

Day 2 Cont | Tuesday, 10 November

	NCSS Auditorium			NCSS Seminar Room		
	Session 12 | Accelerator Science & Radiotherapy Chair: Sowbi Senthilkumar			**Session 13 | Diffraction, Scattering & Crystallography** Chair: Nick Phillips		
13:45	53	Enhancing the treatment efficacy of synchrotron microbeams by adjuvant anticancer therapy	Helen Forrester	42	A γδ T cell receptor recognises the side of the CD1b lipid antigen presenting molecule	Michael Rice
14:00	82	Unleashing the Potential of Microbeam Radiation Therapy in Spontaneous Canine Sarcoma Treatment	Elette Engels	6	The antigen presenting molecule MR1 binds host-generated riboflavin catabolites	Mohamed Abdelaal
14:15	35	Dose-rate dependence of Gafchromic film within ultra-high dose-rate FLASH irradiation fields at PEER	Eugene Tan	74	Optimizing the connectivity of alternate conformations to untangle protein ensemble models	Spencer Passmore
14:30	77	High-Spatial-Resolution Dosimetry for Microbeam Radiotherapy with a Multi-Channel Hydrogenated Amorphous Silicon Detector	Rabia Sandhu	76	Room-temperature serial crystallography of the antivirulence drug target DsbA by in-tray serial crystallography	Christopher Szeto
14:45	45	Geant4 Modelling and Experimental Validation of Synchrotron Minibeam Radiation Therapy with Clinically Relevant Treatment Scenarios	Vincent de Rover	1	Targeting cancer's metabolic rewiring: structure-guided discovery of malic enzyme inhibitors at the AS	Ben Krinkel
15:00	*Break (10 mins)*					
	NCSS Auditorium			**NCSS Seminar Room**		
	Chair: Lucy Costello **Session 14 | Imaging & Microscopy**			Chair: Michael Jones **Session 15 | Spectroscopy**		
15:10	69	Heavy element-tagged fluorescent probes for correlative optical and X-ray fluorescence microscopy	Samuel Nitschke	21	Thermal evolution of amorphous ferric arsenate in the presence of inorganic and organic phosphorus	Purba Anindita Khan
15:25	117	Benchmarking Naturally Weathered Polysiloxane and Polyurethane Coatings using Synchrotron IRM, XFM and GiSAXS/GiWAXS against Tabletop Techniques	Kilahney Murphy			
15:40	18	Reconstructing Late Holocene eruption histories at Mt Taranaki using synchrotron X-ray fluorescence microscopy of speleothems	Nathan Collins			
15:55	61	Prompt gamma ghost imaging on the DINGO beamline	David Paganin			
16:10	**Student awards & closing remarks - Michael Jones & Maggie Zhai**					
16:30	CLOSE					