



PROGRAM

UIM 2025

Australian Synchrotron
User Meeting

Wed 26th - Fri 28th November 2025



*Note: Timetable subject to change



New Zealand
Synchrotron
Group

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The New Zealand Synchrotron Group Ltd (NZSG) helps New Zealand's research community access the state of the art facilities at the Australian Synchrotron. New Zealand has access rights to a dedicated pool of beamtime at the Australian Synchrotron in recognition of our members' and our government's assistance in funding the beamline infrastructure and an annual access fee. NZSG's function is to oversee New Zealand's partnership in the Australian Synchrotron and to coordinate access for New Zealand researchers wishing to use the facility.

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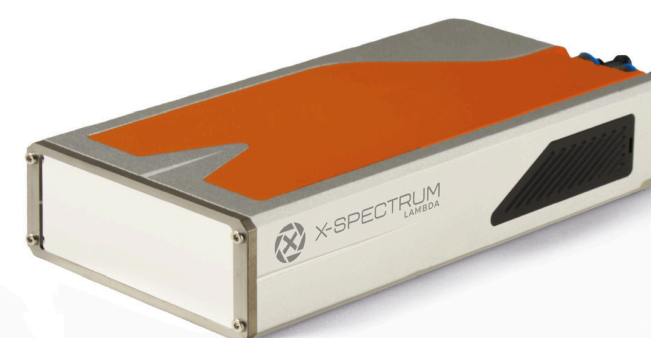
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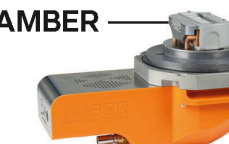
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Program

Day 1 | Wednesday, 26 November 2025

10:00	Registrations open				
10:45	Welcome & House Keeping				
10:55	Plenary Lecture 1 Mid-career Research Award – Kaye Morgan: <i>Advancing Medical Imaging with Patterned X-ray Light</i>				
11:45	Facility update – Danielle Martin, Andreas Moll				
12:30	Lunch				
	NCSS Auditorium			NCSS Seminar Room	
	Session 1 Diffraction, Scattering & Crystallography Chair: Anton Blencowe			Session 2 Accelerator Science & Radiotherapy Chair: Michael Jones	
13:20	36	Mechanistic Insights into Early Thermal Aggregation Events of Monoclonal Antibody Formulations	Vinodya Karunadhika	75	Optimizing Microbeam Radiation Therapy Through Temporal Fractionation in Non-Small Cell Lung Cancer Christian Arzberger
13:35	3	Scattering Approach to Understanding Protein-Nanoparticle Interactions within Ionic Liquids and Deep Eutectic Solvents	Zachary Candiloro	65	Benchmarking the PEER beamline for very high-energy electron radiotherapy studies James Cayley
13:50	80	Designing Lipid Nanocarriers for Polyphenol Delivery in Neurodegenerative Disease	Lucrezia Guarneri	53	Improving therapeutic efficacy in microbeam radiotherapy (MRT): From unidirectional to complex treatment geometries Bernd Frerker
14:05	38	Exploring Interfacial Characteristics of Pure Glucose Fatty Acid Esters	Jessica Frahn	51	Optimizing Orbit Correction in Future Australian Synchrotron Storage Rings Tasman Harvey
14:20	Break				
	NCSS Auditorium			NCSS Seminar Room	
	Session 3 Imaging & Microscopy Chair: Yameng Fan			Session 4 Diffraction, Scattering & Crystallography Chair: Porun Liu	
14:30	62	Using Micro-Computed Tomography to analyse Fibre Orientation and Its Influence on Mechanical Performance in Moulded Fibre Materials	Emma Gobes	69	Structure-property relationship in liquid metal alloys Vaishnavi Krishnamurthi
14:45	79	From Dim to Detail: Comparative Lung Imaging with CT, MRI, and PC-CT	Lucy Costello	86	Examining fundamental interactions between chitosan and sol-gel silica toward sustainable materials using SAXS and SANS Christopher Hill
15:00	89	Optimising Lung Aeration using External Negative Pressures in Near-Term Rabbit Kittens	Cailin Diedericks	90	Probing the Dispersion Behaviour of Ti ₃ C ₂ T _x MXene Nanosheets Using X-ray Scattering Rufus Mart Ceasar Ramos
15:15	97	Unravelling indium cycling in mine waste: insights from the combined application of high-energy synchrotron XFM and XAS	Olivia Mejias Gonzalez	17	Solving Structures in Solution: Updates on the BioSAXS Beamline Annmaree Warrender
15:30	Afternoon Tea				

Program

Day 1 cont. | Wednesday, 26 November 2025

	NCSS Auditorium				NCSS Seminar Room		
	Session 5 Spectroscopy				Session 6 Imaging & Microscopy		
	Chair: Annette Dowd				Chair: Andrew Stevenson		
16:00	87	Keynote: Standing Still to Measure Even Faster: Fixed Energy XAS	Bernt Johannessen		6	Keynote: Microbeam radiotherapy for the primary tumour controls distant metastasis in a preclinical triple-negative breast cancer model	Olga Martin
16:30	93	Following Redox Chemistry Across Space and Time- Insight from Xr-rays from Molecular to Macro	Rosalie Hocking		7	Application of Deep Learning-Based Methods in medical imaging	Marian Cholewa
16:50	9	Revealing the role of spin in Electrocatalysis through Synchrotron-Based X-ray Spectroscopy	Xiaoning Li		57	Toward Patient-Specific Dosimetry in Synchrotron Phase-Contrast Breast CT: A Monte Carlo Framework for Clinical Translation at the Australian Synchrotron	Amir Entezam
17:10	18	Engineering and Probing Sub-Nanoscale Active Sites for Energy Conversion Applications	Porun Liu	55	Phase contrast and deep learning for X-ray dose reduction in breast cancer imaging	Ashkan Pakzad	
17:30				Finish			
17:50	Poster Session						
19:30	Close						

Program

Day 2 | Thursday, 27 November 2025

	NCSS Auditorium				NCSS Seminar Room		
	Session 7 Spectroscopy Chair: Ingrid Ukstins				Session 8 Diffraction, Scattering & Crystallography Chair: Yameng Fan		
9:00	72	Tracking long-term flavonoid accumulation in Antarctic moss leaves non-destructively through synchrotron-based infrared microspectroscopy	Hao Yin		73	Towards observation of 3D microstructure in real time	Yu Chen
9:15	59	Thermal Transformation of Iron-Arsenic Minerals Under Realistic Bushfire Scenarios	Usman Faryad		19	Exploiting rewired metabolism in cancer: a biochemical focus on malic enzyme inhibitors using structure-based drug design	Ben Krinkel
9:30	24	Ultrasonic machined semi-metasurfaces on Quartz for THz Biosensing	Pabitraa Madhurima		56	In Situ Powder Diffraction Study of Hydrogen Release Mechanisms in Mg-Based Hydrides for Large-Scale Hydrogen Storage and Transportation	Xia Hua
9:45	5	Characterization of Electrospun Core-Shell Fibres Encapsulating Iron and Vitamin A for Nutrient Deficiency using Synchrotron THz/Far Infrared	Latheesha Abeywardana		67	Self-Assembled Ion Transport Channels in Block Copolymer Electrolytes for Dendrite-Free All-Solid-State Sodium Batteries	Zhou Chen
10:00	39	Ultra-thin Films of 1-hexyl-3-methylimidazolium-based Ionic Liquids on Graphite	Sowbarnika Senthilkumar		66	Investigation of the Structural Expansion of a Skyrmion-Hosting Material upon Dual-Doping	Branwen Hastings
10:15					104	Structural kinetics in aqueous Aluminum fumarate/Ag MOF composites via time-resolved in situ WAXS	Nandish Hosadoddi Srikantamurthy
10:30	Morning Tea						
11:00	Plenary Lecture 2 Early Career Researcher Award – Qi (Hank) Han: A Five-Year Journey Connecting Chemistry and Biology through Synchrotron Science						
11:50	Transit/Break						
12:10	Lunch						
	NCSS Auditorium				NCSS Seminar Room		
	Session 9 Diffraction, Scattering & Crystallography Chair: Annemaree Warrender				Session 10 Imaging & Microscopy Chair: Kaye Morgan		
13:10	63	Keynote: Probing grain growth via in-situ Synchrotron/lab dynamic Laue	Jun Wang		49	Keynote: In-situ loaded synchrotron high-flux X-ray tomography of structural supercapacitor compression specimens	Alex Harman
13:40	70	A first look at materials science research at the SAXS/WAXS beamline	Pablo Mota Santiago		21	In-situ synchrotron X-ray imaging of intermetallic growth and void distribution in an advanced soldering process: Overview	Kazuhiro Nogita
14:00	77	A Solid-Gas-Aqueous Reaction Cell for In Situ Transmission X-Ray Diffraction of Cement Carbonation	Tian Zhang		27	Technical details on and experiences of the MCT beamline multilayer monochromator	Andrew Stevenson
14:20	34	Differential stress and microstructure impact gypsum dehydration kinetics – insights from in-operando SAXS	Christoph Schrank		32	Evaluation of Distal Radius and Tibia Bone Microstructure in Human Specimens Using Phase-Contrast Synchrotron Radiation Computed Tomography	Ali Ghasem-Zadeh
14:40	Afternoon Tea						

Program

Day 2 cont. | Thursday, 27 November 2025

	NCSS Auditorium				NCSS Seminar Room		
	Session 11 Spectroscopy				Session 12 Diffraction, Scattering & Crystallography		
	Chair: Jeremy Wykes				Chair: Hank Han		
15:10	42	Updates from the Spectroscopy Group	Peter Kappen		84	Protic ionic liquids as stable carrier media for serral protein crystallography	Connie Darmanin
15:30	35	µMEX Tender energy, scanning probe, X-ray fluorescence microscopy at MEX1	Bruce Cowie		30	Deconvoluting the thermal expansion of Sn and Bi in Sn-Bi low temperature solder alloys – an in-situ heating powder diffraction study	Xin Fu Tan
15:50	28	Accurate XANES measurements on non-symmetric crystals with XBDM	Michael Jones		101	Quantum Crystallography, Chemical Crystallography in the 21st Century	Alison Edwards
16:10	58	In situ foliar transformation of selenium nanoparticles during photosynthesis – evidence from µ-XANES and proteomics	Marjana Yeasmin		99	Zero-Emission NO ₂ Capture Using Divalent Metal-Exchanged Zeolites for Clean Air Technologies	Qinfen Gu
16:30				Break			
16:40				Plenary Lecture 3 Stephen Wilkins Thesis Medal – Samantha Alloo: <i>Decoding the Flow of Speckles to Unlock Multimodal X-ray Images</i>			
17:40				Finish			
18:30				Gala Dinner at Park Royal			
20:30				Close			

Program

Day 3 | Friday, 28 November 2025

NCSS Auditorium						
08:30 User Meeting Town Hall						
Session 13 Imaging & Microscopy						
Chair: Roger Bourne						
09:30	85	Seamless acceleration towards megapixels per minute & update from the XFM Beamline		Emily Finch		
09:50	82	Mid-infrared Coded Aperture Holography		Molong Han		
10:10	26	Quasar: An open-source program to unravel meaning from pretty pictures		Annaleise Kleine		
10:30 Morning Tea						
	NCSS Auditorium				NCSS Seminar Room	
	Session 16 Imaging & Microscopy				Session 14 Spectroscopy	
Chair: Alex Harman					Chair: Maggie Zhai	
10:50	22	MCT of soft tissue at the Australian Synchrotron	Roger Bourne	98	Update on the Capabilities at the THz Beamline: from Environmental to Energy applications.	Dom Appadoo
11:10	13	Dual-sample X-ray multi-modal imaging	Marie-Christine Zdora	95	Two for the price of one – double Illumination at the Australian Synchrotron	Stewart Walker
11:30	68	Which dark-field imaging technique is best for me? Comparing a family of approaches at MicroCT	Michelle Croughan	Session 15 Diffraction, Scattering & Crystallography		
Chair: Maggie Zhai						
11:50	46	Correlative synchrotron-Based Micro-CT, large area SEM and FIB-SEM imaging of biological samples	Denis Korneev	41	Enhancing Capabilities and Opportunities for Materials Research by Advanced Diffraction and Scattering Beamline at Australian Synchrotron	Yang Cao
12:10	23	Shifting images between time and space to achieve X-ray phase and dark-field imaging	Samantha Alloo	45	Probing the Internal Structure of Lipid Nanoparticles at the Interface	Brendan Dyett
NCSS Auditorium						
12:30 Student Awards & Closing Remarks						
13:00 Close						