
AUM 2023
ANSTO User Meeting
27 - 29 November
Research that matters
PROGRAM
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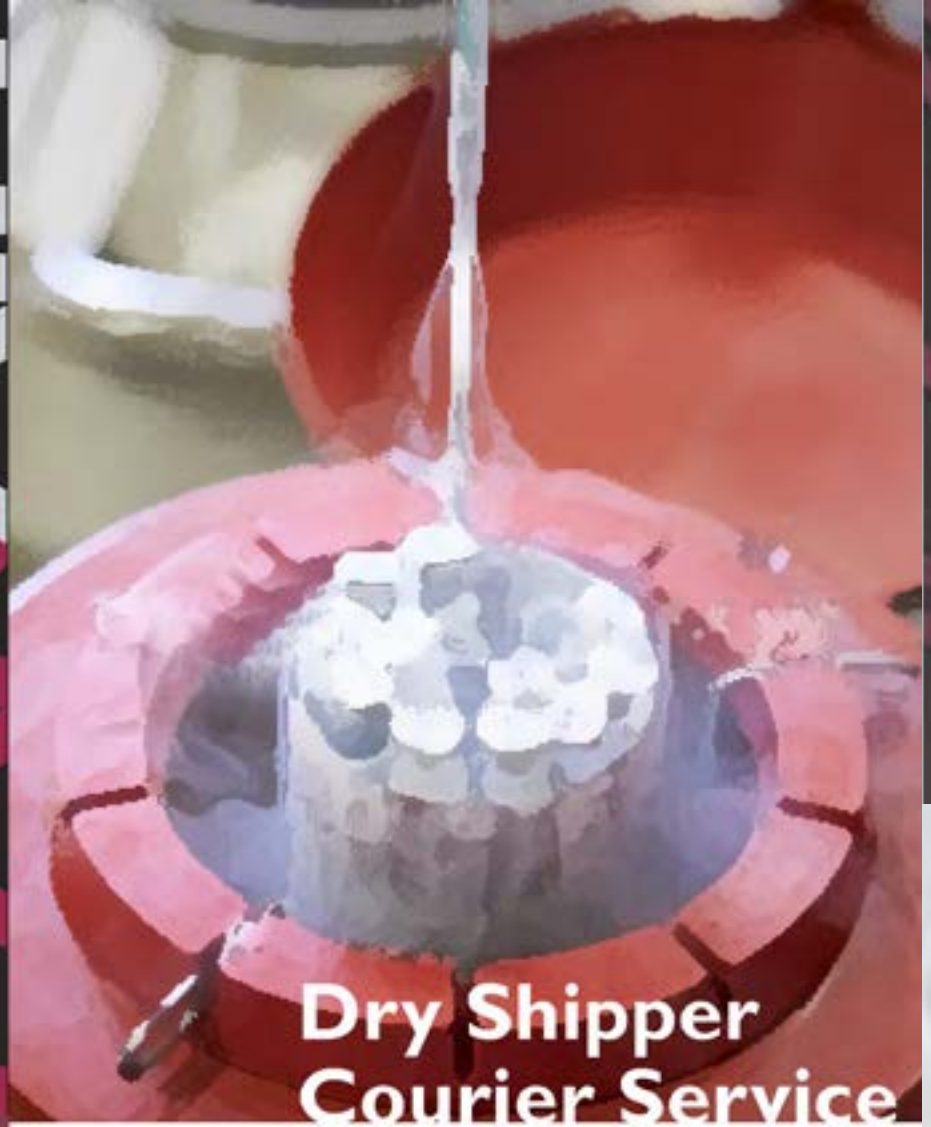

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Program: Day 1 Session 1 | Monday 27th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
10:15	Sign In					
11:00	Opening and Welcome					
11:20	Plenary: A journey through beamlines with ionic liquids by Tamar Greaves					
12:10	LUNCH					
13:10	**Chair: Clements Ulrich**		**Chair: Stuart Prescott**		**Chair: Vikram Raghuwanshi**	
	Session 1: Advanced Materials		**Session 1 : Chemistry, Pharmaceuticals and Crystallography**		**Session 1: Food Science and Soft Matter**	
	Keynote: 81 Real-time monitoring of the epitaxial graphene growth with neutron reflectometry	Aiswarya Pradeep-kumar	**Keynote**. 20 Ionic Conductivity and Disorder in Sodium Perovskite Solid-State Electrolytes	Mia Brennan	**Keynote**: 75 Charged colloidal particles interaction in the microgravity environment of space: A USANS and SANS study	Jitendra Mata
13:40	49 High-intensity in-situ neutron diffraction study of MAB phase ceramic synthesis	Jessica Merz	18 Seeing the Unseeable: Coupling Synchrotron X-Ray and Neutron Diffraction to Understand the Role of Vanadium	Bryce Mullens	76 Application of Neutron Spectroscopy and Imaging to Reveal Drying Behaviour and Preservation of Australian Native Fruits	Paul Michalski
14:00	99 Examination of the local and average structure of the CaTi1-xFexO3-x/2 ionic conductor	Frederick Marlton	129 The steam oxidation mechanism of U2CrN3/UN by in situ neutron diffraction	Jennifer Stansby	26 Combining neutron reflection and computations to unravel the behaviour of (multi-)responsive polymer brushes in electrolyte solution	Grant Webber
14:20	133 Substrate Surface Morphology Regulation Enabling Highly-efficient p-i-n Perovskite Solar Cells	Renjun Guo	37 Exploring Lithium-Mediated Ammonia Electrosynthesis through In Situ Neutron Reflectometry	Callum Weir-Lavelle	145 SAS to elucidate the phase behaviour of phospholipids in protic ionic liquids	Livia Salvati Manni
14:40	11 Investigation of battery electrode microstructure using small and ultra-small angle neutron scattering	Matthew Teusner	34 Crystal field splitting, magnetoelastic coupling and quantum tunneling: Inelastic Neutron Scattering as a tool in molecular magnetism	Richard Mole	48 Enhancing Nanofiltration Performance through Aligned Hexagonal Lyotropic Liquid Crystal	Senlin Gu

Program: Day 1 Session 2 | Monday 27th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
15:00	**AFTERNOON TEA**					
15:30	**Chair: Anita D'Angelo**		**Chair: Anton Blencowe**		**Chair: Chris Wensrich**	
	Session 2: Instruments and Techniques		**Session 2: Biological Systems and Life Science**		**Session 2: Facilities Updates**	
	111 10 years of open shutter at DINGO at OPAL	Ulf Garbe	23 Structure and function of the bacterial flagellar motor	Anna Roujeinikova	Facility Update - ACNS	Jamie Schulz
15:50	130 Implementation of machine vision based automatic feedback control and analysis of Liquid sample delivery at European XFEL.	Jaydeep Patel	43 Structural Analysis of Antimicrobial Peptide Binding to Biomimetic Bacterial Membranes Using Neutron Reflectometry	Anton Le Brun	Facility Update - AS	Danielle Martin
16:10	52 Zero-optics dark-field imaging with multi-energy X-rays	Jannis Ahlers	144 Fusion Peptide-modified Nanoparticles as Therapeutic Delivery Vehicles	Leonie van 't Hag	Facility Update - NDF	Tamim Darwish
16:30	102 High-energy X-ray diffraction is coming soon to the Australian Synchrotron	Josie Auckett	123 "Examine well, thy blood- at the Australian Synchrotron	Stewart Walker	Facility Update - CAS	David Child
17:00	**Poster Slam**					
18:00	**Close**					

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Program: Day 2 Session 1 | Tuesday 28th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
8:00					ANBUG AGM Room 4	
	Chair: Chris Wensrich		Chair: Anton Blencowe			
9:00	ANBUG PhD Award		UAC ECR Award			
9:20	ANBUG ECR Award					
9:50	ANBUG Neutron Award					
10:20	ANBUG Career Award					
11:00	MORNING TEA					
11:20	Chair: Karyn Wilde		Chair: Liz Carter		Chair: Jayshri Dumbre	
	Session 1: Instruments and Techniques		Session 1: Earth, Environment and Cultural Heritage		Session 1: Manufacturing, Engineering & Industry	
	Keynote: 94 From Space to Medical Research: Australia's unique ion microbeam capabilities to investigate radiation effects with micro-precision	Stefania Peracchi	**Keynote**: 128 A revolution in palaeontology with neutron and synchrotron X-ray imaging at ANSTO	Joseph Bevitt	**Keynote**: 42 Effectiveness of an electromagnetic Space Radiation Shield upon impact by high-energy protons and ions	Gail Iles
11:50	107 Validation of the Unified Tomographic Reconstruction (UTR) algorithm for Propagation-Based X-ray Phase-Contrast Breast Imaging	Robert du Toit	142 Adelaide ATOM Trap Trace Analysis; A new facility for Groundwater dating	Ivan Herrera Benzaquen	131 Analysis of residual stresses, microstructure, and hardness of steels after laser cleaning	Jiawei Tu
12:10	77 Advancements in Creating a Digital Twin: Modeling and Analysis of the Dingo Thermal Neutron Imaging Beamline	Klaudiusz Jakubowski	114 3D Isotopic Reconstruction in Bulk Samples Using Post-Neutron-Tomography SPECT	Sherryn MacLeod	50 Investigation of Crystallinity Distribution of In-situ Consolidated CF/PEEK Composites with Wide Angle X-ray Scattering (WAXS)	Shafaq Shafaq
12:30	27, Freeform modelling of Reflectometry data with Maximum Entropy	Andrew Nelson	57, Synchrotron MCT illuminates uniquely preserved 445 Ma bituminous radiolarian fossils from the Wufeng Formation, China	Jiani Sheng	41, Characterisation of Fe distribution in Al-Zn-Mg-Si coating alloys using synchrotron X-ray fluorescence	He Tian

Program: Day 2 Session 2 | Tuesday 28th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
12:50	**LUNCH**					
13:40	**Chair: Joseph Bevitt**		**Chair: Katy Wood**		**Chair: Gail Iles**	
	Session 2: Instruments and Techniques		**Session 2: Biological Systems and Life Science**		**Session 2: Manufacturing, Engineering & Industry**	
	Keynote: 101 Advancements at the Australian Synchrotron Infrared Microspectroscopy (IRM) beamline: a new field of research, a cross-beamline sample holder, and (potentially) going sub-micron	Annaleise Klein	**Keynote**: 58 The role of ultra-high dose rate in effectiveness of Microbeam Radiotherapy for breast cancer treatment	Olga Martin	**Keynote**: 35 In-situ synchrotron X-ray diffraction analysis on the phase stability of dross particles in hot-dip Zn-55wt%Al-1.6wt%Si galvanizing bath	Dong-dong Qu
14:10	126 Investigation of the SOI microdosimeter for high LET ion measurements	James Vohradsky	121 The DAAD Australia – Germany exchange grant tool: 5 years of bench-to-bedside support for microbeam radiotherapy (MRT)	Elette Engels	141 Direct inversion of the Longitudinal Ray Transform for Bragg-edge strain tomography	Chris Wensrich
14:30	146 The BRIGHT future of X-ray Spectroscopy at the Australian Synchrotron	Simon James	118 How the IMBL is Helping us Zoom in on Lung Cancer	Lucy Costello	136 Mesoscale numerical simulations for WAAM additively printed structures for prediction of temperature, microstructure and its effect on mechanical properties	Fernando Valiente Dies
14:50	89 Determining the neutron scattering function, using a semiempirical Hartree-Fock electronic structure calculation	Anton Stampfl				

Program: Day 2 Session 3 | Tuesday 28th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
15:10	AFTERNOON TEA					
15:30	**Chair: Stefania Peracchi**		**Chair: Leonie van't Hag**		**Chair: Dongdong Qu**	
	Session 3: Instruments and Techniques		**Session 3: Biological Systems and Life Science**		**Session 3: Manufacturing, Engineering & Industry**	
	Keynote: 139 A 4th Generation Synchrotron for Australasia	Peter Kappen	**Keynote**: 17 Visualising In-Vivo Magnet-Assisted Treatment Delivery within the Airway using Ultra-Fast Phase-Contrast and Dark-Field X-ray Imaging	Ronan Smith	**Keynote**: 7 Envisioning Laser Additive Manufacturing through X-ray - case studies at Australian Synchrotron	Yunhui Chen
16:00	84 Microstructure decomposition using propagation-based dark-field x-ray imaging	Jeremy Stockdill	106 A subset of Vδ1+ CD1d reactive γδ T cells recognise CD1d in an auto-reactive manner	Michael Rice	54 The effect of In concentration and temperature on dissolution and precipitation in Sn-Bi alloys	Qichao Hao
16:20	30 Turbo charging the X-ray fluorescence microscopy beamline at the Australian Synchrotron	Keith Bambery	38 MOSkin dosimetry in a synchrotron FLASH radiation environment using very high energy electrons at PEER.	James Cayley	132 Application of finite element simulations to nanosecond laser ablation process	Yutaka Tsumura
16:40	**Stephen Wilkins Thesis Medal**					
17:10	**Poster session**					
19:00	**Dinner and Awards**					
21:00	**Close**					


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Program: Day 3 Session 1 | Wednesday 29th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
8:00					UAC AGM Room 5	
9:00	Chair: Lu (Daniel) Jiang		Chair: Jiali (Maggie) Zhai		Chair: Guochu Deng	
	Session 1: Advanced Materials		Session 2 : Chemistry, Pharmaceuticals and Crystallography		Solid State Physics	
	Keynote: 122 Ion Implantation for Surface Engineering of Heterojunction Nanostructures for Advanced Applications	Sajjad Seifi Mofarah	**Keynote**: 14 Inverse cubic and hexagonal mesophase evolution within ionizable lipid nanoparticles correlates with mRNA transfection in macrophages	Haitao Yu	**Keynote**: 112 Scaling Behaviour and Stability of Magnetic Skyrmions in Cu2OSeO3	Clemens Ulrich
9:30	134 Hybrid improper ferroelectricity in A-site cation ordered Li2R2Ti3O10 ceramics with triple-layer Ruddlesden-Popper structures	Xiao-Qiang Liu	4 MX3: A new macromolecular crystallography beamline at the Australian Synchrotron	Daniel Eriksson	90 The Unique Lattice Dynamics of Nanodiamond – a Molecular Dynamics and Inelastic Neutron Scattering Investigation	Caleb Stamper
9:50	165 Investigating the role of Mo on precipitation in Mo-containing steel by ex-situ, in-situ SANS and APT	Baoqi Dong	135 A supramolecular investigation of selenadiazole functionalized porphyrin nanotubes	Catriona Thomson	5 Study Multiferroic/Magnetoelectric Materials with Inelastic Neutron Scattering	Guochu Deng
10:10	120 Size, shape and self-assembly of Nanodiamonds in suspension	Gary Bryant	97 Polymer brushes through the eyes of a Platypus and a Spatz	Hayden Robertson	28 A “Partial” Spin-liquid Candidate with a Perfectly Isotropic 2-D Kagomé Lattice	Chris Ling
10:30	60 Structural and Magnetic properties of CoMoO4	Joey Williamson	149 Hydrogenated amorphous silicon dosimeters built on flexible kapton substrates for Microbeam Radiation Therapy	Matthew Large	78 Magnetic structures and spin reorientations in the 2D triangular antiferromagnets.	Shinichiro Yano
10:50	MORNING TEA					

Program: Day 3 Session 2 | Wednesday 29th November 2023

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Time	Stream 1 Room 1-2		Stream 2 Room 3		Stream 3 Room 4	
11:20	Chair: Annaleise Klein		Chair: Peter Kappen		Chair: Livia Salvati Manni	
	Questionnaire		Questionnaire		Questionnaire	
11:30	Session 2: Instruments and Techniques		Session 2: Instruments and Techniques		Session 2: Food Science and Soft Matter	
	Keynote: 16 New gas system and mass spectrometer for the Powder Diffraction beamline at the Australian Synchrotron	Anita D'Angelo	**Keynote**: 154 Isotopic labelling strategies of the National Deuteration Facility enabling biomolecular investigations using NMR spectroscopy.	Karyn Wilde	**Keynote**: 21 Controlling the liquid crystal formation of cellulose nanocrystals with electrolyte	Christine Browne
12:00	61 Development and application of time-resolved directional dark-field retrieval at IMBL and MCT.	Michelle Croughan	85 Emu neutron backscattering spectrometer: Capabilities and applications	Nicolas de Souza	86 Pulse protein gels: understanding the role of soluble proteins and protein particles in the gelation mechanisms through SANS/USANS	Alice Tiong
12:20	119 A Two-Dimensional Characterisation of Low Gain Avalanche Diodes for Low-LET Microdosimetry	Jay Archer	80 The development of in situ nuclear fuel studies on Wombat diffractometer	Melody Ranger	138 Surface composition of β-carotene microcapsules comprising pea/whey protein complexes by synchrotron-FTIR microspectroscopy	Woojeong Kim
12:40	8 Using sandpaper to capture multi-dimensional X-ray dark-field images (Sam Alloo)	Samantha Alloo	151 Quokka, the Monochromatic Small Angle Neutron Scattering instrument at ANSTO: Planned Upgrades & Scientific Highlights	Kathleen Wood	51 Characterisation of poly(N-isopropylacrylamide) (PNIPAM)-grafted nanocellulose hydrogels	Vikram Singh Raghuwanshi
13:10	Closing including Poster Awards					
13:20	End					

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