Issue 11 | September 2026

Scatter Matters

Supported by NCRIS National Research Infrastructure for Australia An Australian Government Initiative

From the Director's desk

As the end of the year looms upon us, we are busy in the midst of our regular workshops & schools: Small-Angle Scattering User Workshop, Powder Diffraction & X-Ray & Neutron Imaging Workshop. This year we are combining the ANSTO & Helmholtz Zentrum Berlin (HZB) school with Asia-Oceania Neutron Scattering Association (AONSA) neutron school. I would like to thank the community for their interest in the schools and ACNS staff and community lecturers for their participation.

We extend our continuing appreciation to those who have engaged with and provided their input in the 2026 National Research Infrastructure Roadmap. Both the ACNS and NDF are partially supported through the National Collaborative Research Infrastructure Strategy (NCRIS) which is informed by the 5-year roadmapping process. We are expecting the Roadmap Exposure Draft to be released in September 2026, which will be another opportunity to provide feedback of the future of Australia's national research infrastructure.

The 2027-1 Proposal Round call is currently open for beamtime from February 2027 to July 2027 and closes on 15th September with proposals submitted to the ACNS Portal. You may notice that the ACNS Portal looks a little different to a week ago. We are in the reskinning the ACNS portal to a modern interface. A reminder that we now offer Scientific Computing/Atomistic Simulations as part of the user program. Please consider if this support can assist with your neutron scattering measurement analysis and interpretation.

ANBUG & AINSE will hold the biennial Neutron Scattering Symposium (AANSS2026) on the 23rd to 25th November 2026 at Lucas Heights NSW. We will also be launching the engagement plan for the ACNS Science Plan at the symposium. The abstract deadline is 18th September 2026 – so don't delay in getting your abstract in and hopefully see you there!

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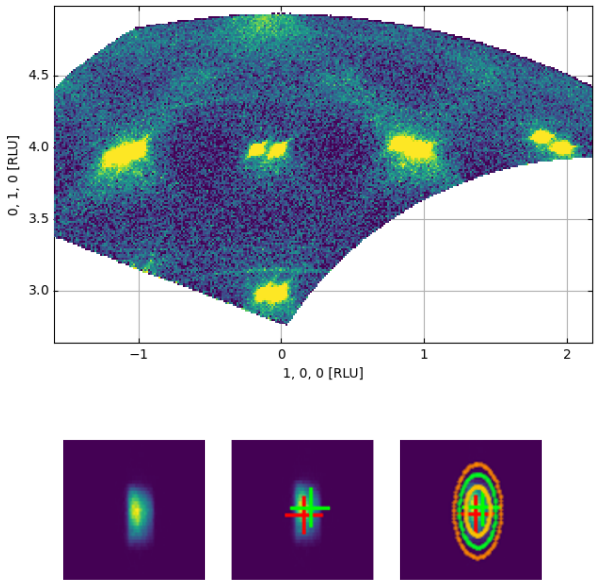
ACNS updates and highlights

Diffraction

The diffraction instruments available within the user program at ACNS are Echidna (high-resolution powder diffraction echidna@ansto.gov.au) and Wombat (high-intensity diffraction wombat@ansto.gov.au). The group also includes the Scientific Computing staff and runs the Physical Properties Measurement System (PPMS).

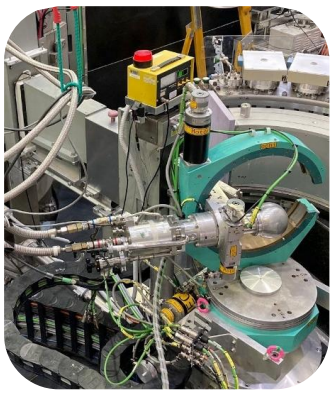
Single crystal success on Wombat

Siobhan Tobin



Top image: Wombat data showing diffuse scattering from a piezoelectric material. Bottom image: integration of intensity ellipsoid with Int3D

In 2025 new software was introduced on Wombat expedite single crystal data analysis: Int3D (developed by Nebil Katcho at the Institute Laue Langevin) and DMCpy (developed by Jakob Lass, Samuel Harrison Moody and Øystein Slagtern Fjellvåg at Paul Scherrer Institute). This has been very successful in streamlining several aspects of single crystal work; including UB matrix determination, data visualisation and integrating intensities of peaks. Added to this, the Eulerian cradle and its bottom-loading cryostat CF5 have also been back in action, enabling access to multiple scattering planes in the temperature range 10 K – 300 K. The 120° 2θ range and 15° out-of-plane coverage of the Wombat detector enables large swathes of reciprocal space to be measured, even with other sample environments (such as the 11 T magnet) that only have one axis of sample rotation. In 2026 we have measured crystals as small as 3 mm^2 (10 mg), though larger samples are also welcome! Single crystal proposals are encouraged on Wombat for the 2027-1 round, please reach out to Siobhan Tobin siobhant@ansto.gov.au or Chin-Wei Wang cww@ansto.gov.au with your enquiries.



Eulerian cradle with cryostat CF5 set-up on Wombat.

In situ tension testing on Wombat

Siobhan Tobin

The wombat instrument has expanded its capabilities to include *in situ* tension testing of materials. The STEP LAB EA050 Electromechanical Actuator with a maximum load of 50 kN has been commissioned by Toby Heisler and Amy Shumack of the Sample Environment team. The high intensity of Wombat allows data to be acquired on a timescale of

seconds, meaning that tension tests can be easily completed in under an hour.

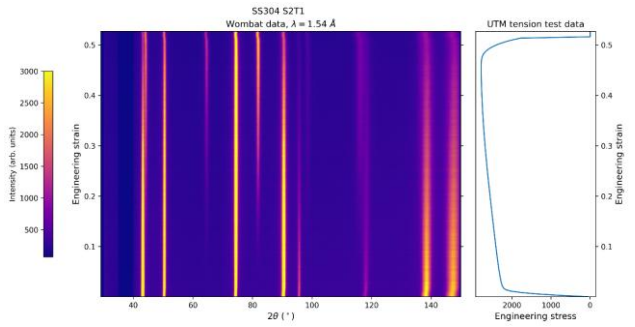
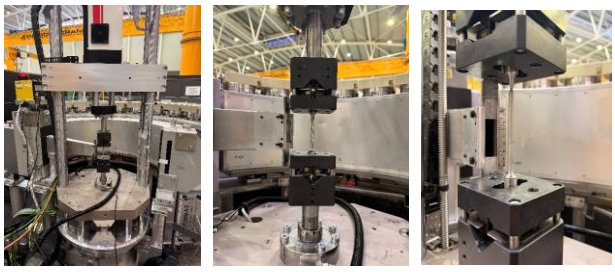


Image of data taken during in-situ strain measurement of a sample of stainless steel 304.

Data from a tension test of a cylindrical sample of stainless steel 304 (an austenitic alloy) is shown in the plot above. As deformation increased, the martensitic phase emerged alongside the austenitic phase. For this result, a diffraction pattern was collected every 15 seconds. The STEP LAB unit is also capable of compression, fatigue, and creep testing, as well as customisable multi-action testing. While these capabilities are not yet commissioned on Wombat, we welcome enquiries from researchers interested in the ongoing development of the STEP LAB universal testing machine on Wombat. Tension testing is available for proposals in the 2027-1 round. Please contact Toby Heisler at heislert@ansto.gov.au for details on required sample geometry etc.



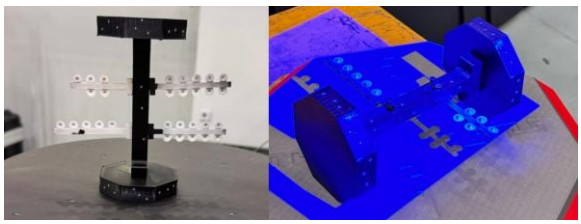
The STEP LAB universal testing machine on Wombat, stainless steel sample before tension test, stainless steel after tension test.

Engineering & imaging

The engineering and imaging instruments at ACNS are Dingo (imaging dingo@ansto.gov.au) and Kowari (strain scanning kowari@ansto.gov.au).

Kowari, imaging the small with a light scanner

Mark Reid (ACNS) Ondrej Muransky, Emmanuel Flores Johnson, Ravi Subbaramaiah (Nuclear Materials Research and Technology)

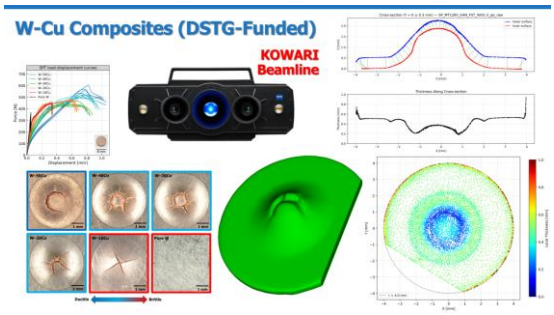


Samples being scanned with the Zeiss ATOS 5 structured light scanner held with a 3D printed mount.

The Kowari instrument, using a spatially resolved technique, requires the ability to know and understand where in a sample our diffraction signal is originating from. For that reason, a Zeiss ATOS 5 structured light scanner has been commissioned to obtain 3D scans of samples prior to Kowari measurements. This can be used for producing accurate outlines of samples on a particular plane of interest which allows for precise positioning of the sample in the beam.

A team from ANSTO's Nuclear Materials Research and Technology group, recently approached the Kowari team to determine if the system could support a project they were conducting on micro-mechanical testing for the assessment of new nuclear materials. These tests use samples 8 mm in diameter and 0.5 mm thick that are "punched" in the middle by a ram. To elucidate the results of these tests very accurate measurements of the shape of the resulting bulge is required (a result of the deformation of the material coupled with the elastic spring back).

Initial trials on test samples indicated that indeed the ATOS 5 could achieve the required precision. This also revealed that the capability of the scanning system was not being fully exploited, given the measuring volume of the ATOS 5 is 170 mm^3 (in this configuration). To this end a mount was designed and manufactured (3D printed) at ACNS to allow for up to 40 samples to be scanned at once.



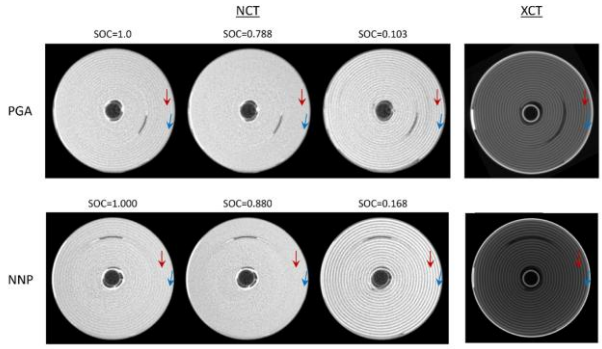
Examples of the successful use of this scanned data on the disc samples for the deformation analysis.

Highlight: Watching a battery breathe, DINGO tracks lithium and electrolyte transport inside 18650 lithium-ion cells

Ulf Garbe

Every laptop, power tool and EV battery pack relies on the humble 18650-type cylindrical lithium-ion cell, in which a spiral-wound "jellyroll" of anode, separator and cathode is packed inside a steel can together with a liquid electrolyte. Understanding exactly how lithium and electrolyte move around inside this jellyroll during charge and discharge is central to improving battery lifetime and safety – but very few non-destructive techniques can watch it happening in real time.

In a new *in operando* study published in Batteries & Supercaps, an international team led by Dominik Petz, Martin Mühlbauer and Anatoliy Senyshyn (Heinz Maier-Leibnitz Zentrum, Technical University of Munich), together with Michael Schulz and Ulf Garbe (ANSTO), combined optical micrometry, X-ray computed tomography and neutron imaging to follow two commercial cells through full charge–discharge cycles.



Neutron (left) and X-ray (right) computed tomography reconstructions of the two battery cells at full charge, an intermediate state, and full discharge. Neutron imaging clearly distinguishes cathode (red arrow) and anode (blue arrow) via lithium content – invisible to X-rays – and reveals the electrolyte signal near the cell wall (curved dark feature, top row). Reproduced from Petz et al., Batteries & Supercaps 2026, 9:e70452 (CC BY 4.0).

Neutron computed tomography was carried out on the Dingo thermal-neutron imaging instrument at ACNS, complemented by cold-neutron radiography and tomography on ANTARES at FRM II in Garching. As neutrons are exquisitely sensitive to hydrogen and lithium – unlike X-rays, which mainly "see" the heavier cathode and anode materials – the beam could distinguish cathode from anode, follow lithium as it shuttles between them, and, crucially, track the liquid electrolyte itself as it is squeezed out of the electrode stack and pumped in and out of the cell's hollow centre pin.

Since uneven electrolyte and lithium distribution is a known driver of accelerated ageing, capacity fade and, in the worst case, thermal runaway, being able to watch this process directly opens a promising route to better-informed cell design, ageing models

and safety assessments for the batteries that power everything from phones to electric vehicles.

The paper is open access and available at: https://doi.org/10.1002/batt.70452

Beneath the waves: Extraordinary dietary insights from a dismembered ichthyosaur from the lower Cretaceous

Joesph Bevitt

Life reconstruction of the inferred three-way food web interaction; the large ichthyosaur KK F1435 Platypterygius australis capturing a pterosaur, while a Kronosaurus queenslandicus lurks in the waters below. Artwork by Peter Trusler.

During the Early Cretaceous, approximately 110 million years ago, much of north-eastern Australia was covered by the inland Eromanga Sea. Today, this vast area is dry and overlaid by the Great Artesian Basin, the largest and deepest artesian basin in the world.

Near the town of Richmond, Queensland, an extraordinary discovery of a well preserved, but partially dismembered large (~6-7m) ichthyosaur Platypterygius australis was found with multiple large bite marks and associated stomach content. A combination of neutron and synchrotron X-ray imaging were used to provide evidence for a three-way food-web interaction in ancient seas.

Neutron imaging of a globular mass located behind and to the side of the skull yielded the first evidence that ichthyosaurs (think a reptilian version of a dolphin) predated upon pterosaurs (flying reptiles). This opportunistic feeding is not entirely surprising, but exceedingly rare in the fossil record.

Large parts of the ichthyosaur are missing, consistent with the deadfall of a partially rotting carcase, with several partial ribs present, and numerous bones exhibiting scavenging bite marks and signs of crushing. Synchrotron X-ray and photogrammetry of several vertebrae revealed that the bite marks are conical and consistent with the type of damage that may be inflicted by the largest marine predator of the region, the massive pliosaur Kronosaurus. This work was published in Gondwana Research:https://doi.org/10.1016/j.gr.2026.05.014 and is accompanied by an exceptional painting by renown Australian palaeoartist and palaeontologist Peter Trusler.

Inelastic

The inelastic instruments at ACNS are Taipan (triple-axis spectrometer taipan@ansto.gov.au), Emu (high-resolution back-scattering spectrometer emu@ansto.gov.au), Pelican (time-of-flight spectrometer pelican@ansto.gov.au) and Sika (cold triple-axis spectrometer sika@ansto.gov.au).

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Reflectivity

The reflectivity instruments at ACNS are Platypus platypus@ansto.gov.au, Spatz spatz@ansto.gov.au and the X-ray reflectometer instrument. The group also includes the ^{3}He polarisation staff.

Rheometer now available on Platypus

Andrew Nelson

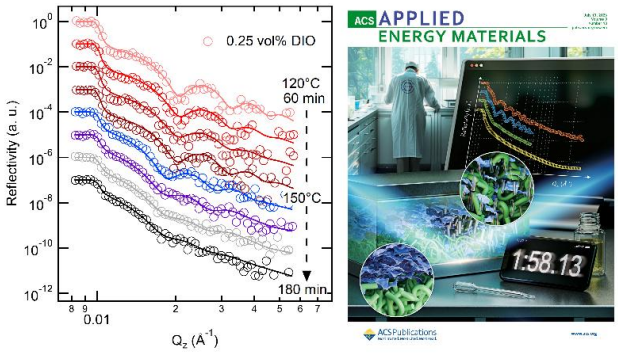
The Anton Paar rheometer MCR302 purchased through the ARC LIEF grant LE200100221 is now available for use on the Platypus reflectometer, thanks to commissioning work performed by the Sample Environment team. This enables us to perform in-situ rheo-NR in the cone-plate geometry. We have two 50 mm (diameter) cone-spindles available, with either a 1 or 2 degree cone-angle. In our first measurements we have accessed shear rates up to 8000 s^{-1}.

The geometry is very similar in principle to a normal solid-liquid measurement. We place a silicon wafer (shiny side up) beneath the cone and use a vacuum to hold it down. We place the liquid of interest on top of the silicon block, and bring the cone down to perform the rheological measurement. There is a solvent trap to reduce sample evaporation. The neutron beam enters through the side of the silicon wafer, reflecting off the silicon-liquid interface.

This setup is useful if you want to characterise an interfacial structure that may change under shear. The two scenarios typically explored are oscillatory (spindle rotates one way, then reverses) or steady state shear (constant speed in one direction). Work is ongoing to investigate improvements in sample mounting and temperature control.

Science Highlight: Tracking bulk heterojunction morphology in real time

Tzu-Yen (Ian) Huang and Anton Le Brun



Bulk heterojunction (BHJ) active layers represent a key architecture in organic solar cells, where finely intermixed donor–acceptor networks support efficient charge generation and transport. Owing to the non-equilibrium nature of solution processing, these layers are typically trapped in thermodynamically metastable states. Under continuous thermal stress, molecular redistribution, crystallization, and phase separation can progressively disrupt these structures and degrade device performance.

Conventional depth-profiling methods such as X-ray photoelectron spectroscopy and time-of-flight secondary ion mass spectrometry generally provide *ex situ* snapshots and are destructive, preventing continuous observation of the same film during thermal annealing. A depth-resolved kinetic probe is therefore essential to resolve the migration and segregation of constituent molecules across the film thickness. Time-resolved neutron reflectometry is well suited to this purpose, providing non-

destructive, depth-resolved structural information with sufficient penetration to probe buried interfaces. Changes in the reflectivity fringes and fitted scattering length density profiles can therefore be followed continuously, allowing the onset and progression of vertical redistribution to be quantified over time.

Using a model non-fullerene BHJ system, continuous neutron reflectivity data were collected on the Spatz time-of-flight reflectometer and analysed in 15-min time slices, with representative time-resolved profiles shown in the figure. Pristine BHJ films undergo clear vertical stratification above 120 °C, whereas incorporation of 0.25 vol% 1,8-diiodooctane delays the extrapolated onset of redistribution by ~2.3-fold and reduces the apparent redistribution rate by ~38%. Further quantitative NR analysis and complementary X-ray scattering results, including the delayed development of ITIC crystalline ordering, are detailed in the published article here https://doi.org/10.1021/acsaem.6c00922

Science Highlight – first publication from Spatz with the vapour delivery system

Anton LeBrun

A recent experiment published in *Small* from users at BCMaterials in Spain used Spatz to investigate the degradation of mixed organic-halide perovskite films under humidity. The experiment involved using the atmospheric chamber (known locally as "the do everything chamber") and the dynamic vapour delivery system on Spatz (see schematic below). The work used neutron reflectometry to trace the degradation pathway of the perovskite films in a humid atmosphere and how layers of titanium dioxide stabilise the films. The result provides insights into how humidity degrades potential new materials for solar cells and provides and how degradation could be prevented.

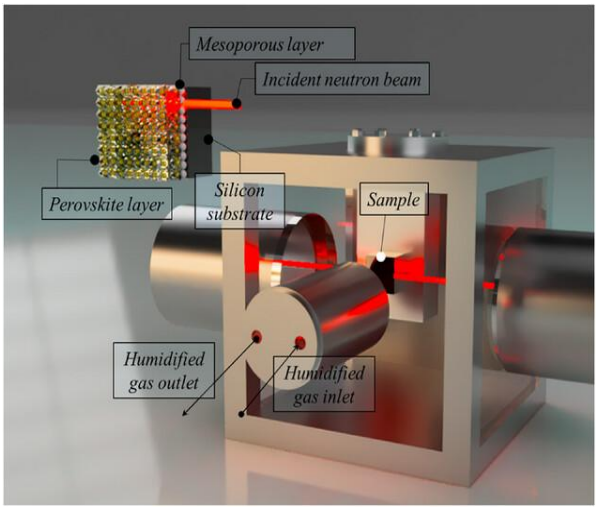


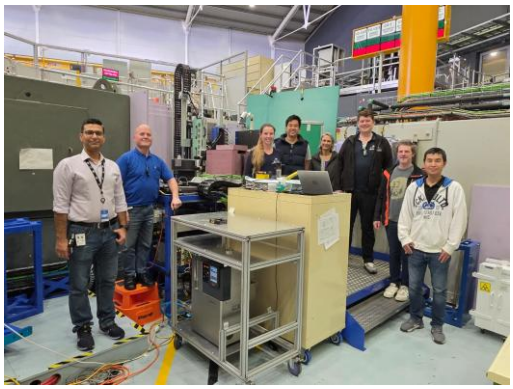
Diagram of the experimental set-up on the Spatz neutron reflectometer demonstrating the simultaneous humidity and neutron reflectometry measurements. (Figure taken from Salado et al., *Small* e09525 (2026) https://doi.org/10.1002/smll.202509525)

Small Angle

The small-angle-scattering instruments at ACNS are Quokka quokka@ansto.gov.au, Bilby bilby@ansto.gov.au, Kookaburra (ultra-small angle) and the X-ray small-angle instrument.

Kookaburra new 8 position tumbler

Jitendra Mata



The team who commissioned the new tumbler.

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A new eight-position sample tumbler has recently been developed and commissioned for the Kookaburra USANS instrument, adding an important capability for experiments on suspensions, colloids, soft materials, food systems, minerals, industrial formulations and other samples where settling can affect the data. The tumbler allows up to eight samples with a wide range of volumes to be rotated during measurement, while the temperature of each position can be controlled independently from −20 °C to 110 °C. It is also highly versatile, accommodating SANS cells, including demountable and Helma cells, and giving users greater flexibility across different sample types and experimental conditions. This enables more reliable data collection from systems that require continuous motion, controlled thermal environments or compatible sample holders across the suite of small-angle neutron scattering instruments available at ACNS.

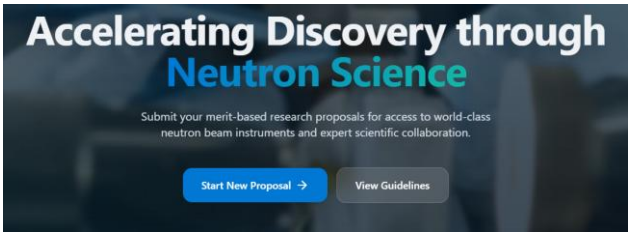
The development brought together the Sample Environment team (project led by Chris Baldwin), Scientific Operations, Engineering, the Kookaburra instrument team, and controls, software and technical staff to deliver a practical, user-ready system that is already receiving very positive feedback from early experiments. Importantly, the capability has been integrated into the instrument workflow, making it sophisticated in function but straightforward for routine use. Its compatibility with both Kookaburra and SANS sample cells also strengthens its value for the wider scattering community. The design and lessons from this project are informing new tumbler developments for the SANS instruments, so this work is not only enhancing Kookaburra but also helping to build a broader sample-environment platform for ACNS.

Operations

The operations team at ACNS includes the technical group, laboratory group and sample environment group.

ACNS lab staff are available to assist with access to the laboratories and advise on chemical safety in support of your neutron proposals, and can be reached at acns_laboratories@ansto.gov.au

ACNS User Portal update



The ACNS proposal submission portal is getting a facelift! By the time you read this, our new-look submission system should be live https://neutron.ansto.gov.au/. All your favourite proposal sections are still there, with a streamlined workflow and more intuitive navigation. Together with the visible changes, a lot of changes have been made to the backend to simplify future development. If you would prefer to use the old interface you can user the following link https://acns.nbi.ansto.gov.au/.

Feedback on the new-look portal is welcome: please email james.hester@ansto.gov.au with your thoughts and suggestions.

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Achievements

Leadership award for Kirrily Rule

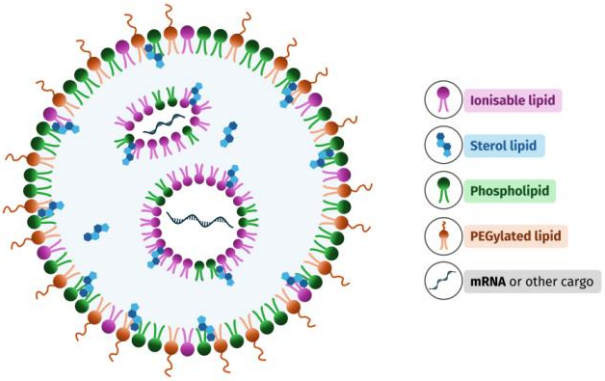
Congratulations to Prof Kirrily Rule for being awarded the Australian Institute of Physics Women in Leadership Medal.

National Deuteration Facility (NDF) updates

The National Deuteration Facility has expertise in both chemical deuteration and biodeuteration techniques, enabling access to a wide range of deuterated molecules. The diversity of molecules available can be found in our extensive NDF Product List, which provides examples of the types of molecules and labelling possible. Although NDF is a separate ANSTO research infrastructure platform to ACNS, we share many users and collaborators thus we are using this corner of the ACNS newsletter to get in touch with you all!

NDF News and Science Highlights

NDF Science News and Highlights can be found here on the ANSTO website. Check out the recent NDF web highlight "Deuteration supporting the development of next generation mRNA therapeutics".



The NDF provides access to a large range of custom-made deuterium-labelled lipid nanoparticle (LNP) components to researcher and industry across the four key components LNPs are typically comprised of: an ionisable lipid (or cationic lipid), cholesterol (or other sterol lipid), phospholipid and PEGylated lipid. In this highlight you will find listings of the current deuterated LNP lipids the NDF can provide, as well as a summary of some research outputs where deuterated LNP components have been utilised and enabled quality data to enhance understanding of LNP structure, stability and mechanisms of delivery. Please reach out via ndf-enquiries@ansto.gov.au if you have any questions regarding deuterated lipids.

NDF Access Modes and Proposal Types

There are three modes of access available to NDF capabilities – Merit, Discretionary and Commercial. NDF access conditions have been recently updated, with more detailed information on user access available here.

Reminder for the open ACNS & NDF 2027-1 Round closing 15th September 2026 – if you wish to request deuterated molecules from NDF for use with ACNS experiments, the combined NDF and ACNS Proposal Type 'Deuteration/Neutron' needs to be submitted.

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Event Reports

Small Angle Scattering Workshop

Held jointly between the Australian Synchrotron (AS) and Australian Centre for Neutron Scattering (ACNS) teams, the 6th Small Angle Scattering (SAS) Workshop hosted by ANSTO was run in Clayton. The workshop ran in a hybrid format, and was limited to 20 in-person participants for the hands-on practical components of the course. The course ran over three days between the 3rd-5th June 2026.

The workshop featured lectures covering a wide range of research fields, which were made available virtually to those who were not selected for in person attendance or unable to travel to Clayton. Hands-on experiments covered the basics of data collection, processing and analysis. The workshop also provides an opportunity to interact with like-minded colleagues and to see the Australian Synchrotron's state-of-the art instruments.

All respondents reported that they found the workshop 'useful', with majority rating it to be 'very useful'. This emphasises the importance of running this workshop in the future and keeping majority of the content similar as it was found to effectively address the needs of attendees.

The scientific organisation committee of the Small Angle Scattering workshop.

Powder diffraction analysis workshop

Siobhan Tobin

The annual Powder Diffraction Workshop is a combined effort of the ACNS and Synchrotron diffraction teams. The 2026 edition was held from 24th August until 26th August at the Australian Synchrotron. Thirty PhD students and early-career researchers from universities and research agencies across Australia and New Zealand attended. The morning lectures were complemented by practical data analysis sessions in the afternoons. This enabled students to get to grips with the basic theory behind Rietveld refinement and then put this into practice either in GSAS-II or Topas. All of this learning was fuelled by generous morning and afternoon teas, delicious lunches, a pizza feast and a pub night!

Since the Synchrotron was in a shut down during the workshop, participants were able to roam around the linac, booster ring and storage ring on an exclusive tunnel tour hosted by accelerator operators. They also got to check out the Powder Diffraction beamline and the Advanced Diffraction & Scattering beamlines ADS-1 and ADS-2. The latter beamlines are under construction as part of the BRIGHT initiative, so it was a great opportunity to

get an update and see all the progress that has been made on optics, detectors and more.

Students were also challenged to form their own proposal committees and assess some 'real' proposals for neutron and synchrotron beam time in the proposal judging exercise on the final day. Hopefully they can now approach their next proposal writing tasks and experiments with more confidence! This year, the ACNS staff involved in teaching were James Hester and Siobhan Tobin, while the Synchrotron staff were Josie Auckett, David Cookson, Anita D'Angelo, Helen Brand, Yang Cao, and Caite Setter. Thanks also go to our guest lecturer Tony Wang from QUT, who provided some sage advice on how not to mix crystallography with AI, as well as a wide-ranging overview of the delights of powder diffraction. Finally, an especially large thankyou to Tracy Dangerfield for her stellar organisational efforts in bringing the workshop to fruition. No mean feat considering the number of interstate and international participants and scatterbrained scientists.

The 2027 Powder Diffraction Workshop will be held at Lucas Heights; more details will be in the next issue of Scatter Matters.

Some of the PD workshop teaching team.

Upcoming events and announcements

AINSE-ANBUG neutron scattering symposium 23rd-25th November 202

The ANBUG-AINSE Neutron Scattering Symposium (AANSS) 2026 will be held in person from the 23rd - 25th November 2026 at Lucas Heights, NSW - the home of ANSTO's multi-purpose OPAL research reactor, the Australian Centre for Neutron Scattering (ACNS) and National Deuteration Facility (NDF). The symposium will be hosted at AINSE and ANSTO conference facilities.

AANSS is the biennial symposium of the Australian and New Zealand neutron scattering community. It aims to bring together both local and international users of Australia's neutron research infrastructure with other global experts and users of neutron instrumentation.

The symposium will take place over 3 days, encompassing science talks and poster presentations across 8 topics. It will be a fantastic opportunity to network and engage with your fellow delegates to both renew and establish connections and collaborations.

This symposium is suitable for undergraduate and postgraduate students, postdoctoral and early career researchers, and scientists at all career stages.

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We look forward to welcoming you to AANSS 2026 in November and hearing about your research!

The organisation committee for AANSS 2026

AONSA Awards Call

Call for nominations is open for the AONSA Prize 2027 and AONSA Science Award 2027

The Asia-Oceania Neutron Scattering Association (AONSA) is inviting nominations for the 9th AONSA Prize to recognize an outstanding research career with a significant impact or contribution to the use or development of neutron science or technology in the Asia- Oceania Region. The AONSA Prize was established in 2010 and is awarded once every two years. The past prizes were awarded to Prof. Noboru Watanabe (KEK) in 2011, Prof. Balebail Anantha Dasannacharya (BARC) in 2013, Prof. John William White (Australian National Univ.) in 2015, Prof. Nobuo Niimura (Ibaraki Univ.) in 2017, Prof. Mahn Won Kim (KAIST) in 2019, Prof. Robert A. Robinson (ANSTO) in 2021, Prof. Yasuhiko Fujii (JSNS) in 2023 and Prof. Wen-Hsien Li (TWNSS) in 2025.

Also, AONSA is inviting nominations for the 2nd AONSA Science Award to recognize an outstanding researcher in the middle of their career (8 to 20 years after PhD) to recognize their outstanding scientific achievement (including instrumentation) that has a significant impact or contribution to the neutron science community in the Asia-Oceania Region. Established in 2022, the AONSA Science Award is awarded once every two years from 2025.

Anyone may submit one nomination or a letter of support for the AONSA Prize or AONSA Science Award by September 11, 2026, following the rules as described on the website here. Please send nominations electronically in PDF file to the Chair of the AONSA Prize Selection Committee (jaehc@korea.ac.kr). The Prize winner(s) will be announced in November 2026. The Prize Ceremonies and the delivery of the Prize Lecture will take place during the AOCNS 2027, which is scheduled to held on November 24th – 28th, 2027, in Mumbai, India.

ANBUG update

The Australian Neutron Beam Users group (ANBUG) membership is open to everyone, including international users who conduct experiments at ANSTO.

Currently of the ~ 1000 users who conduct neutrons experiments each year, only ~30% are currently ANBUG members . In the 1990's ANBUG played a key role

in lobbying politicians to upgrade the OPAL reactor

To be a successful lobby group ANBUG needs as many members as possible, particularly in the next five years. ANBUG is a not-for-profit organisation with all proceeds from conferences given back to members via bursaries Membership to ANBUG is FREE, but requires signing up via the website here https://anbug.net/membership-checkout/

Advantages of membership include:

- Representation on the Proposal Assessment Committee & ACNS Advisory committees to ensure that members interests come first
- Student prizes and travel bursaries are available for all members
- Job applications and post-doc positions are regularly sent to the ANBUG mailing list
- ANBUG members are also eligible to apply for international AONSA events, AONSA Prizes and Young Research Fellowships

Call for Nominations – ANBUG Awards 2026

ANBUG is pleased to announce the 2026 ANBUG Awards and invites nominations for the following:

ANBUG Career Award – for sustained contribution throughout the recipient's career to a scientific subfield, or subfields, using neutron scattering techniques – A$550.

ANBUG Neutron Award – for outstanding research in neutron science and leadership promoting the Australian neutron scattering community (>10 years post PhD) – A$300.

ANBUG Early Career Scientist Award – for outstanding research utilising neutron scattering by scientists within 10 years of PhD conferral when accounting for significant career breaks – A$300.

ANBUG Technical Award – for outstanding service contributing to technical aspects of neutron scattering by university / institute staff or a beamlike scientist – A$300.

ANBUG Outstanding PhD Prizes – for PhD theses on research using neutron scattering techniques submitted to a university in Australia or New Zealand after 1st January the year before the award year (i.e., 1st January 2025 for the 2026 award). Two prizes are awarded, one for research in soft condensed matter and one for research in hard condensed matter. Nominations for this award category must be accompanied by copies of the thesis and examiner reports – A$300.

Nomination Deadline: Nominations must be submitted to the ANBUG Secretary at secretary@anbug.net by 30 September 2026, 11:59 pm Australian Eastern Standard Time (AEST).

Website: https://anbug.net/anbug-awards

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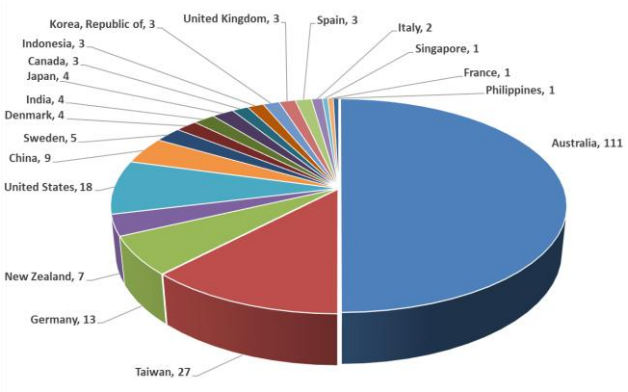
Scatter Matters

Supported by NCRIS National Research Infrastructure for Australia An Australian Government Initiative

Proposal rounds

Results from 2026-2

In the 2026-2 proposal round ACNS received 222 proposals, covering 1274 of experiment days. Our instruments are in good demand with 136% average subscription for the experimental days. International and domestic demand for instrument time remains in a good balance and demonstrates the breadth of ACNS's user base.



Pie chart showing the number of proposals of each of the lead researchers is applying for time on our ACNS instruments.

2027-1 ACNS & NDF Merit Access Proposal Round

The 2027-1 round is now open for merit instrument time applications via the ACNS Portal

We are welcoming applications for merit-based instrument time in our 2027-1 round, ACNS & NDF are accepting proposals for access from February to July 2027. A range of neutron-beam instruments and deuteration capabilities are available to support your research proposal.

Applications close: 15 September 2026 at 11:59 PM AEST.

If you do not already have an account in the ACNS Portal you will need to create one. Please refer to the ACNS & NDF ARP user guide.

Other instrument access options

Discretionary Access for Early Career Researchers

Discretionary requests will be considered for Early Career Researchers where the progress of a student thesis program or Early Career Researcher's career would be detrimentally affected (e.g. where the success is at risk or not able to submit thesis). It is expected that experiments would be undertaken in-person where possible.

Please email requests at any time to ACNS Enquiries along with justification on how the request meets the above requirements. If agreed it meets the requirements a proposal will need to be submitted for scientific, technical & safety review.

Mail-in Proposals for Powder Diffraction

Mail-in proposals for the Echidna Instrument can now be submitted in the ACNS Portal https://neutron.ansto.gov.au/. Applications are welcome anytime, please contact the team on echidna@ansto.gov.au should you have any questions.

Industry and Commercial Access

ACNS offers services for industry and commercial clients via the ACNS Industry Liaison Office.