



# ILLnewsletter



The Institut Laue-Langevin has received a firm commitment from its Associate countries, France, the UK and Germany, to continue operation until 2033. *"We have been working very hard to secure a unanimous commitment from all three Associate countries and are delighted with the decision,"* says ILL Director, Ken Andersen, *"The ILL is now in a position to plan scientific operation until the end of 2033."* The 6th Protocol – extending the original 1967 Intergovernmental Convention for a further 10-year period, from 2024 to 2033, and representing a global investment of about €1bn – was signed by the governments of the Associate countries in 2021. However, operation beyond the end of 2030 was subject to later approval, which has now been granted by the three governments. Having this decision now is crucial, as preparation processes are lengthy and complex. *"We can immediately start the process of securing the fuel needed for reactor operation as of 2031,"* points out Jerome Estrade, Assistant Director responsible for reactor management. [Read more >>](#)

## ILL in focus

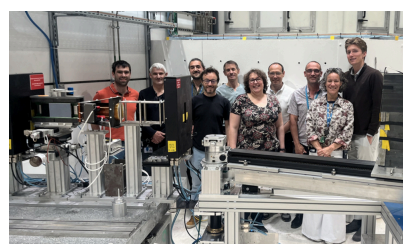
### Neutrons are back at the ILL

The ILL's first reactor cycle of 2025 began in early May and will run for 63 days at 42.5 MW—cycle number 197. This followed a 10-month inter-cycle shutdown marked by major safety and infrastructure upgrades. Key projects included the installation of a new fire sprinkler system, crane refurbishment, and reinforcement of neutron guides. Around 650 scientists from 28 countries will conduct over 350 experiments during this cycle. Among them are the first "novice users" from the NEPHEWS project, coming from Poland, Portugal, and Ukraine. [Read more >>](#)



### A new ('Super') reflectometer for Supermirror characterisation at the ILL

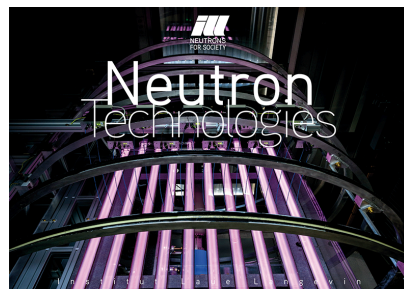
T3, the new polarised cold neutron reflectometer developed by the Neutron Optics Service at the ILL, is now fully operational. Dedicated to characterising the neutron supermirrors produced at the ILL, this is the latest instrument to emerge from the H15 neutron guide project. It is also a vital milestone for the development of advanced neutron optics systems at the ILL. T3 brings a great improvement in performance compared to the previous reflectometer, in particular thanks to the new graphite monochromator with variable vertical focusing. Congratulations



and a big thank you to everyone involved in making this project a success! [Read more >>](#)

## New neutron technologies brochure

The secret behind the ILL's modern and highly optimised infrastructure is the constant upgrade of its facilities and instruments. Major technical developments achieved at the ILL are made available to the wider neutron community. This [brochure](#) showcases ILL's technical expertise and engineering excellence—from advanced neutron optics and high-performance detectors to innovative sample environments—ensuring top-quality neutron beams and experiments.



## The ILL website is getting a (partial) redesign and we need your input!

This year, we will be moving the ILL public website ([ill.eu](http://ill.eu)) to a different system in order to keep up with the evolving technical needs and we will use the opportunity to partially redesign the website, making it clearer, more useful, and more enjoyable to use. [This survey](#) will help us better understand how you use the site, and learn what could be improved, reorganised or simplified.

Your feedback is crucial to make sure we move in the right direction (and don't accidentally remove anything important to you...)

Thank you in advance!

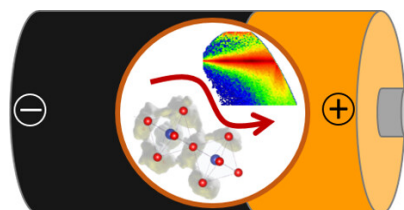


## Recent science news

### Towards the energy materials of the future: a walk through ionic conduction with neutrons

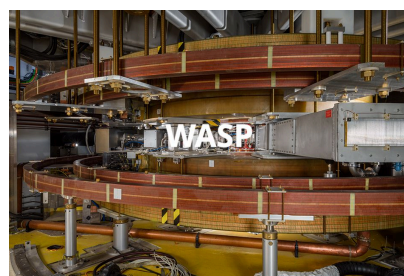
Ionic conduction is one of the most important processes in energy materials. Understanding it in detail is key for developing more performant rechargeable batteries and fuel cells. A recently published article provides a comprehensive combined tutorial and research review of Quasielastic Neutron scattering (QENS) experiments on oxide, lithium and sodium ion conductors. Much of the work has been done at the ILL.

[Read more >>](#)



### Til Membranes Do Us Part: Neutrons reveal the molecular mechanism behind sustainable lithium extraction

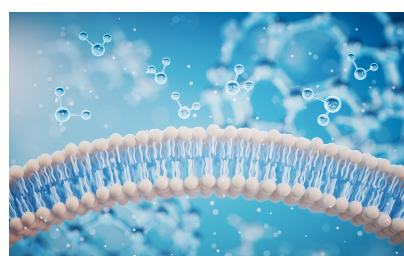
From mobile phones to car batteries, technology relies heavily on lithium ion (Li<sup>+</sup>) batteries. To meet this demand, it is crucial to extract lithium ions from salt lake brines in a more selective and sustainable way. To this end, researchers have designed new membranes based on polymers of intrinsic microporosity, known as PIMs. An international team from Imperial College & UC London, and the ILL used neutron spectroscopy on ILL's WASP instrument to understand the extraction mechanism of these membranes at the molecular level. This study demonstrates the key role of neutrons in developing more environmentally friendly technologies for lithium extraction. [Read more >>](#)



### Looks like somebody's salty: neutrons reveal how ions influence model cell membranes

A research team including PhD student Alice Piccinini (co-supervised by Anja Winter and Sylvain Prévost) used small-angle neutron scattering on ILL's D22 to study how salt affects lipid vesicles—model cell membranes. They found that salts, like those in the human body, can alter vesicle shape, sometimes making them unsuitable for therapeutic use. These insights could guide the design of better drugs and vaccines.

[Read more >>](#)





## Doubts about multiband superconductivity? D33 can fix it!

Superconductivity is the ability of certain materials to conduct an electric current without resistance but usually requires extreme cooling. The discovery of superconductivity in magnesium diboride (MgB<sub>2</sub>) at a relatively high transition temperature of 39K ignited significant interest due to the existence of multiple energy bands. The two-band superconductivity of MgB<sub>2</sub> was demonstrated by small-angle neutron scattering (SANS) experiments carried out at the ILL and published in 2003. Recently published findings from experiments carried out at the ILL and the Swiss Spallation Neutron Source (SINQ) confirm monochromatic SANS as the definitive go-to method to characterise multiband superconductivity in a material. [Read more >>](#)



## Training & workshops

### GATES Initiative: PhD pathways in partnership with UGA

As a long-standing partner of Université Grenoble Alpes (UGA), the ILL is delighted to be playing a key role in the GATES project (Grenoble ATrtractiveness and ExcellenceS) – an ambitious initiative designed to foster top-level research and reinforce Grenoble's position as a leading international scientific hub. Through this programme, ILL and UGA will co-supervise more than 24 PhD students by 2032, strengthening their scientific collaboration and offering outstanding training opportunities for early-career researchers. Four doctoral contracts have already been awarded following two calls for projects by IRGA (Grenoble Alpes research initiatives). [Read more >>](#)



### Neutron training for Poland's future neutron scientists

As part of the Poland's Scientific Member partnership, the ILL welcomed ten students and two supervisors from Poland for an intensive week-long training course designed to introduce them to the world of neutron scattering. Covering a wide array of neutron scattering experimental techniques – including small-angle neutron scattering, diffraction and reflectometry, amongst others – the programme combined theory and hands-on experience of some of ILL's instruments. The aim was to strengthen ties with Poland and nurture the next generation of neutron scattering experts. [Read more >>](#)



### Grenoble EPN Campus: a unique place for structural biology research

The 7th International Symposium on Diffraction Structural Biology ([ISDSB2025](#)) took place on the EPN campus from 5 to 7 May 2025. Co-organised by the ILL with its partners from the Partnership for Structural Biology (PSB), the event featured 40 speakers across sessions covering X-ray, electron, and neutron diffraction, as well as tomography and AI applications in structural biology. As outlined in the [review paper](#) recently published on the Journal of Synchrotron Radiation, the workshop showcased the unique collaborative environment of the EPN campus and its Partnership for Structural Biology (PSB).



### The ILL-ESRF Workshop for Advanced Manufacturing (WAM 2025)

took place on the EPN campus from 3 to 5 June. This 5th edition of WAM, focused on neutron and synchrotron characterisation in the field of additive manufacturing, gathered about 60 participants. Over three intense days, they discussed residual and internal stress, advanced imaging, microstructure analysis, industrial challenges, standardisation in additive manufacturing, and more. Looking forward to the next edition!



## New EU Funding Opportunities Under "Choose Europe for Science"

The [Choose Europe for Science](#) initiative brings together 65 national and regional programs across all 27 EU Member States (among them [Choose France for Science](#)) to attract global research talent. Depending on the funding call, ILL can participate as a host institution or for secondments. Countries offer fellowships, visiting researcher programs, and recruitment opportunities. The European Commission is putting in place new opportunities, namely in relation with [ERC](#) and [MSCA](#) Grants. More info: [europe@ill.eu](mailto:europe@ill.eu)



### Are you about to publish a really nice paper?

The ILL Communication group wants to hear about it... in advance!

Please let us know as soon as the paper is accepted - a 1-line [email](#) or a quick call will do (needless to say, we know everything is under embargo - nothing will be made public until the paper is out). This way communication will be much more effective. Without your science, we can't do science communication!

### Calendar

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**11 June** | College 3 seminar | Professor Ignacio Porras - ILL50-101  
**19 June** | College 3 seminar | Chien-Yeah Seng - ILL50-110-111  
**24 June** | College 3 seminar | Benjamin Koch - ILL50-110-111  
**25 June** | College 9 seminar | Erica Wanless  
**26-27 June** | PSB Symposium: Machine learning in Cellular Structural Biology | EPN Campus  
**30 June** | College 5c seminar | Elton Santos  
**6-10 July** | International Conference on Neutron Scattering - ICNS2025 | Copenhagen - Lund

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The User-Office is available from Monday - Friday 8am - 4.30pm on the first floor of the new ILL50 building.

You can also use the telephone available near to the ILL50 reception to call your Local Contact, or the User Office in case of problem

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