



ILL news letter

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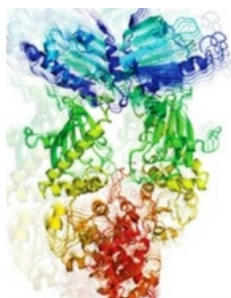


ILL ESS USER MEETING 2024

10 - 11 DECEMBER

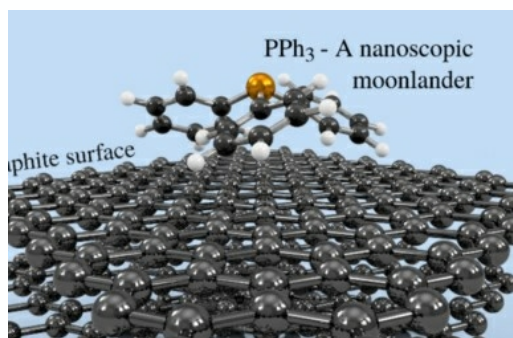
GRENOBLE, FRANCE

SCIENCE NEWS



Protein dynamics: dancing at different rhythms

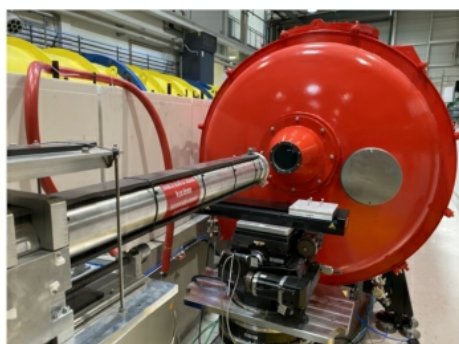
Proteins perform a vast range of functions in living organisms. They are known to be dynamical entities, moving and changing shape in ways that are crucial to their function. Protein dynamics have been previously investigated at various timescales. Nanosecond and picosecond dynamics have been assigned to local motion, while slower dynamics have been attributed to larger conformational changes. The goal of this study was to complete the mapping of the dynamics of the well-known protein Hsp90 by studying the 5-500 ns timescale using a combination of state-of-the-art complementary techniques, and to take the first steps towards understanding how this timescale relates to the slower dynamics known to drive the protein's function. [Read more.](#)



A molecular moonlander: insight into molecular motion on surfaces at the nanoscale

For years, scientists have been intrigued by how molecules move across surfaces. The process is critical to numerous applications, including catalysis and the manufacturing of nanoscale devices. Now, using neutron spectroscopy experiments performed at ILL and advanced theoretical models and computer simulations, a team led by Anton Tamtögl, from Graz University of Technology, unveiled the unique movement of triphenylphosphine (PPh₃) molecules on graphite surfaces, a behaviour akin to a nanoscopic moonlander. In fact, PPh₃ molecules exhibit a remarkable form of motion, rolling and translating in ways that challenge previous understandings. This moonlander-like motion seems to be facilitated by their unique geometry and three-point binding with the surface. [Read more](#)

INSTRUMENTS



SAM is up and running

SAM is the new small-angle neutron scattering (SANS) instrument developed by LLB - Laboratoire Léon Brillouin in collaboration with ILL – and thus one of CRG instruments. Its construction was proposed in the framework of ILL's Endurance, modernisation and upgrade programme, which is now reaching completion. SAM is a highly versatile instrument expanding the capabilities of the SANS technique at ILL. It will also guarantee access to SANS beam time to the French community after the shutdown of CEA's Orphée reactor in Saclay. As a CRG instrument, the beam time will be evenly split between the ILL user program and the French community. The first test measurements on the new instrument SAM at the ILL have been performed. [Read more](#)



From SHARP to SHARPER

The original instrument SHARP (Spectromètre Hybride Alpes Région Parisienne, former IN6) becomes SHARPER (Spectromètre Hybride Alpes Région Parisienne Etendu en Résolution). The original instrument SHARP (Spectromètre Hybride Alpes Région Parisienne, former IN6) was a time-focusing time-of-flight spectrometer designed for quasi-elastic and inelastic scattering. It was operated at ILL as a CRG (Collaborating Research Group) instrument with LLB (Laboratoire Léon Brillouin, Saclay, France). SHARP offered four incident wavelengths: 4.1, 4.6, 5.1 and 5.9 Å with associated energy resolutions. Recently upgraded through the SHARP+ project, it will now be operational on the full range of wavelengths from 2 to 6 Å and, at a later stage, from 6 to 12 Å, thanks to an additional Mica monochromator (currently under study). To highlight these new features, it has been decided to rename the instrument SHARPER (Spectromètre Hybride Alpes Région Parisienne Etendu en Résolution). SHARPER will remain a CRG instrument with LLB and will come online during the upcoming reactor cycle. The Instrument Responsible is Jean-Marc Zanotti. We wish SHARPER all the best for this first cycle of operation and for the future! [Read more](#)

ILL STRATEGY



ILL science strategy working group meets again

The second meeting of the ILL's Science Strategy Working Group took place at the ILL on 18 April. Each of the focus groups created in the first meeting in March presented the state of the art of one of the key scientific areas identified and the contribution of neutrons in this area, as well as proposals on mechanisms for implementing the Science Strategy. These presentations prompted fruitful discussions, making it possible to identify emerging research areas as well as research areas, both fundamental and applied, that could be consolidated by developing internal research programmes or strengthening user support. The Working Group will continue its work in preparation for the third meeting scheduled for 17/18 June, focusing on prioritising scientific areas based on their impact and refining the solutions proposed for strategy implementation. [Read more](#)

EVENTS & VISITS



NMSUM 2024: UK Neutron and Muon Science and User Meeting

This important event took place at Warwick University in April, attracting over 300 participants, for sessions dedicated to students, science and facilities (ISIS, ILL and ESS). ILL is keen to engage with its various user communities at every opportunity. About 20 students, scientists and directors attended NMSUM 2024 to give presentations about science and recent developments at ILL (including progress on the Endurance upgrade programme), enjoy the many interesting and stimulating discussions and prepare future experiments and collaborations at ILL. We look forward to the next NMSUM in 2025 and other user meetings across Europe before then.



An 'additive manufacturing week' in Grenoble

The third Workshop on Additive Manufacturing (WAM2024) took place at Grenoble's European Photon and Neutron Campus, where both the ESRF and the ILL are located. As in previous editions, the goal was to bring together industry and large scale facilities to discuss on the latest advances in the use of neutrons and X-rays for the additive manufacturing sector. The workshop included sessions on space, industry and standardisation, in-situ/operando monitoring and modelling, as well as opportunities for longer discussions and network building. The participants had also the opportunity to visit ILL and ESRF. [Read more](#)



Visit of Michael Arentoft, EU R&I representative

On April 29th ILL's director, Ken Andersen, and the head of partnerships and communication service, Mark Johnson, welcomed Prof. Michael Arentoft, head of unit at the European's Commission Directorate for Research and Innovation, where he is deputy director for Innovation, Prosperity and International Cooperation, dealing in particular with open science and European research infrastructures. It was a pleasure to show our state-of-the-art instrument suite, following the comprehensive Endurance upgrade programme. This was also an opportunity to discuss ILL's portfolio of EU projects and how we can help to deliver the EU missions for science, innovation and training, addressing major societal challenges. [Read more](#)

[MORE HIGHLIGHTS HERE !](#)

NEWS FOR USERS

Latest proposal round results

251 proposals were accepted at the panel meeting on 25-26 March 2024 and will be scheduled during the second cycle in 2024.

Next proposal deadline: 16 September 2024.

Submitted proposals will be evaluated by the panels on 13-14 November 2024.

Scheduling period: one and half cycle to two cycles in 2025, depending on demand

Easy Access requests for short measurements and **DDT requests** for full experiments to be performed as soon as possible can be submitted at any time. Follow instructions [here](#).

Important dates about forthcoming proposal rounds and reactor Schedule.

ILL ESS USER MEETING 10-11 DECEMBER 2024 [REGISTRATION OPEN](#)

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 problems

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