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WATCH THIS VIDEO ON HOW REMOTE ACCESS WORKS AT THE ILL



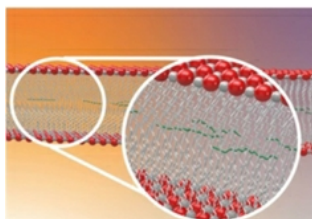
ENDURANCE upgrades

This week sees the first neutrons in the new secondary spectrometer of the cold neutron, time-of-flight spectrometer SHARP (formerly IN6). There is now a bigger surface area, position sensitive, ^3He detector, as on IN5 and PANTHER.

The SANS instruments, D11 and D22 also have new detectors - a bigger detector on D11, which doubles the sensitive area and increases the counting rate capability by 20, and a wide angle detector on D22, increasing the dynamic Q-range by up to a factor of 10.

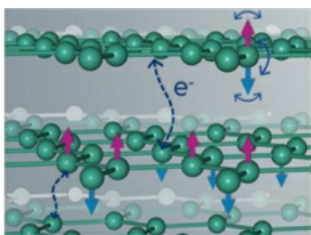
Finally the second protein crystallography station, DALI, is finishing commissioning and ready to measure crystals, including some related to COVID and others grown in the International Space Station.

HIGHLIGHTS AND SCIENCE NEWS



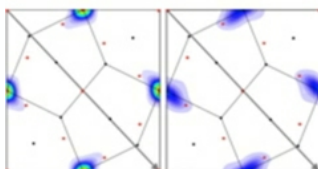
Another key to mystery of life emerging on Earth

A recent study at the ILL has shown how alkane molecules played a role in creating the earliest known life forms. One key question is how the earliest cell membranes managed to survive intense heat and pressure. These membranes were composed of the simple molecules available at that time; to obtain the energy they needed to develop, they must have been able to endure the hostile environment around hydrothermal vents on the ocean floor. The scientists used a model of cell protomembranes incorporating alkanes to confirm that the alkanes could ensure the membranes' survival under conditions similar to those around a hydrothermal vent. The study has thus revealed what may have been an important step along the long pathway to the creation of life. [Read more](#)



High pressure neutron studies reveal the evolution of magnetism through an insulator-to-metal transition

Through record-breaking high-pressure measurements at the ILL, it has been possible for the first time to directly track the evolution of magnetism through an insulator-to-metal transition in an exciting family of low-dimensional magnetic insulators. Magnetic interaction in these materials is broadly limited to within the two-dimensional planes of transition metal ions. The materials provide a versatile playground in which to explore the fundamental properties of magnetism and electrical conduction. They also exhibit a range of behaviour useful for the development of future devices. [Read more](#)



Magnetic frustration in a pentagonal network

As part of a study into magnetic frustration researchers from the CEA-UGA Mem Lab characterized the magnetism resulting from frustration in $\text{Bi}_2\text{Fe}_4\text{O}_9$, identifying for the first time a model of a pentagonal lattice of magnetic atoms. They were able, using neutron diffraction, to observe the original ordered fundamental state of this compound. The inelastic neutron scattering gave them access to the microscopic ingredients at the origin of this orthogonal order. [Read more](#)

[MORE HIGHLIGHTS HERE !](#)

[A SELECTION OF RECENT ILL PUBLICATIONS](#)

NEWS FOR USERS

Proposal round

636 proposals were submitted by the last deadline, giving a total of 2878 requested days. A maximum amount of beam time was made available for this proposal round and we will be doing our best to deal with the existing backlogs.

The panel meetings will again be held by video, on 29-30 March 2021.

There will be no autumn proposal round in 2021 due to the long shutdown to change the H1-H2 beam tube, which serves the entire, main instrument hall, and deliver several Endurance upgrade projects.

Reactor cycles

Three cycles are planned in 2021, for a total of about 170 days, before the one-year shutdown. The lengths and dates of the cycles are still to be finalised and will be posted [here](#).

Important information for users being able to come on site

The next reactor cycle was scheduled assuming that most users cannot come to ILL. New software tools for remote instrument control and data treatment will continue to be trialled during this cycle. Those users who will be able to come to ILL for their experiments must carefully read and follow the working [procedures and practical issues](#) for visitors on site.

[Previous issues of the ILL newsletter](#)

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