THE EUROPEAN NEUTRON SOURCE

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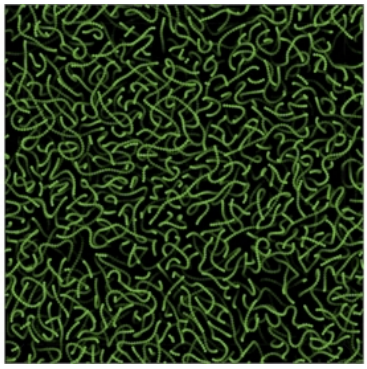
SPOTLIGHTS ON SCIENCE

Neutrons help to analyse outer surface interactions on E. coli

Bacterial infections can be lethal and are becoming increasingly resistant to antibiotics. Researchers have been using neutrons to explore the complex outer surfaces of the bacterium Escherichia coli, and they have revealed in the process, with great precision and detail, how such bacteria interact with their surroundings. Understanding these interactions is crucial, as E.coli infections can be lethal. They lead to fatal sepsis if untreated, killing 6 million people every year. This research may provide new possibilities for the development of antimicrobial agents. Read more



Neutrons on the quest to find the fifth dimension in star polymer dynamics

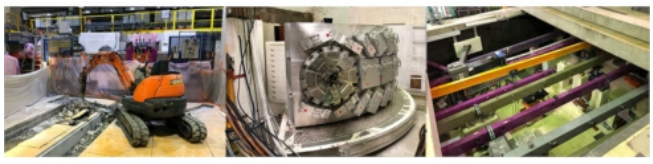
Entangled polymers are a unique form of matter which continue to puzzle physicists. At the small scale of a monomer, motion is similar to that of simple or Newtonian liquids, and very fast. At the larger scale of whole chains, the effective diffusion is extremely slow, accompanied by huge viscosity and the ability to store elastic energy like a rubber band. This topological effect, called entanglement, has proven difficult to treat theoretically. Its nature is fundamentally different from many other thick fluids. Recently published work pioneers a unique computer algorithm used to capture the billions of steps needed for entangled polymers. Using a streamlined physical model, the simulation runs hundreds of times faster than traditional code. It opens new horizons for the time scales addressable in scientific computing. Simulations of slow polymer dynamics are confronted with spin echo data from IN15.
Read more

MORE HIGHLIGHTS HERE !

GENERAL NEWS

31 years of Spanish Scientific membership at the ILL

It is now 31 years since the Spanish Ministry of Education and Science signed its first agreement with the ILL, providing access to neutron beam time for Spanish scientists. Spain thus became the ILL's first Scientific Member, to be followed, of course, by many others. To celebrate the anniversary,today's Ministry of Science, Innovation and Universities organised a joint event with the ILL, which will took place on November 28th 2018 at the CSIC, the Spanish Research Council in Madrid.
Read more



There is a lot of work going on during the shutdown: IN4,seen here without its shielding, has been removed to make way for Panther, a digger is preparing the ground for a new marble floor for IN6/SHARP (now a CRG instrument operated by LLB) and the guide tunnels are open for new components to be installed.

NEWS FOR USERS

ILL and ESS European User meeting

The joint ILL and ESS user meeting - held last 10 to 12 October in Grenoble - was a fantastic display of scientific fireworks. Out of the 500 participants, about 160 scientists were able to speak, either in the plenary sessions or at satellite meetings, with presentations on the state of their research. As Helmut Schober declared, the meeting was "a fascinating opportunity for the whole range of neutron experts, whether from the scientific community or industry, to have their say in how neutrons will continue to inform scientific and technological development in the key areas of society." This first joint user ILL - ESS user meeting was indeed a great success, with articles covering the event in German and French newspapers.
We are looking forward to seeing for the next edition, in 2020 in Lund !

First neutrons on WASP

It's all buzzing for the new wide-angle spin-echo spectrometer, WASP, as we've recently celebrated its very first neutrons. WASP is a particularly complex high-intensity spin-echo spectrometer. It has taken up a huge amount of effort, for both its design and later construction. With the arrival of WASP the Millennium Programme comes to an end, and that is a significant milestone for the ILL. We'll be welcoming first users on WASP in mid-2019. Visit the instrument web page.

Reactor operations 2019 and 2020

There will be 3 cycles in 2019 with two before the summer; the first cycle is planned to start on 21st March. The three cycles will be followed by a 10-month shutdown before the two cycles planned for the autumn of 2020. A panel meeting to examine proposals is planned for 9-10 April 2019, but there will be no meeting in the autumn of 2019. There will be two proposal rounds in 2020, in the spring and autumn. The 324 proposals accepted after the latest round (out of the 561 submitted) will be scheduled in the first 1.5 cycles in 2019.

Free "golden open access" publications

As part of the FILL2030 project, the ILL will finance about 40 publications with "gold open access" status by the end of 2020. Please fill out this short form to request an open access grant. The funding will run on a 'first come, first served' basis. Check out the reminder note on requirements for ILL publications: what you need to know.

Previous issues of the ILL newsletter

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