PAUL SCHERRER INSTITUT

PSI facilities newsletter

full version available from:
http://www.psi.ch/info/facility-news

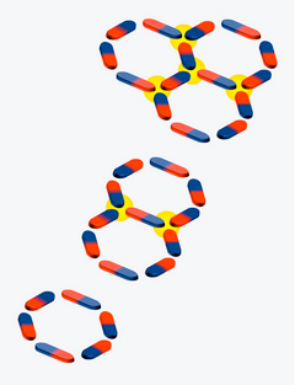
Announcement

SLS Techno Trans AG

Swiss Light Source Techno Trans AG

The main goal of the SLS Techno Trans AG is to facilitate industrial use of the Swiss Light Source. If you are not an expert in a particular technique or you are unsure of which technique is best suited for your application(s), we can help you. Our Mission is to coordinate any and all services for industrial/proprietary users - we want to be your one stop shop! http://www.psi.ch/sls-techno-trans-ag/.

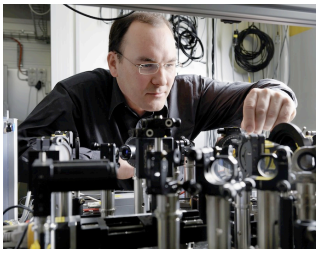
Research highlights



SLS - Scientists use nano-rods to investigate how matter assembles

A. Farhan et al, Nature Physics 9, 375 (2013), DOI:10.1038/nphys2613

In the microscopic world, everything is in motion: atoms and molecules vibrate, proteins fold, even glass is a slow flowing liquid. And during each movement there are interactions between the smallest elements – for example, the atoms – and their neighbours. To make these movements visible, scientists at the Paul Scherrer Institute PSI have developed a special model system. It is so big that it can be easily observed under an X-ray microscope, and mimics the tiniest movements in Nature. The model: rings made from six nanoscale magnetic rods, whose north and south poles attract each other. At room temperature, the magnetisation direction of each of these tiny rods varies spontaneously. Scientists were able to observe the magnetic interactions between these active rods in real time. These research results were published on May 5 in the journal "Nature Physics". http://www.psi.ch/sls/scientific-highlights.



SwissFEL - Magnetisation controlled at picosecond intervals

C. Vicario et al, Nature Photonics, Advance Online Publication 11 August 2013, DOI: 10.1038/nphoton.2013.209

A terahertz laser developed at the Paul Scherrer Institute makes it possible to control a material's magnetisation at a timescale of picoseconds (0.000 000 000 001 seconds). In their experiment, the researchers shone extremely short light pulses from the laser onto a magnetic material, where the magnetic moments – "elementary magnets" – were all aligned in parallel. The light pulse's magnetic field was able to deflect the magnetic moments from their idle state in such a way that they exactly followed the change of the laser's magnetic field with only a minor delay. The terahertz laser used in the experiment is one of the strongest of its kind in the world. http://www.psi.ch/media/magnetisation-controlled-at-picosecond-intervals.