PAUL SCHERRER INSTITUT

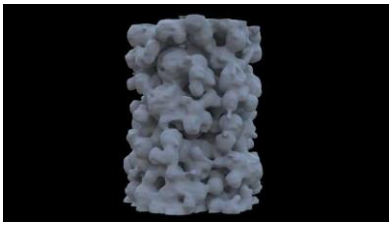
PSI facilities newsletter

https://www.psi.ch/science/facility-newsletter

Research highlights

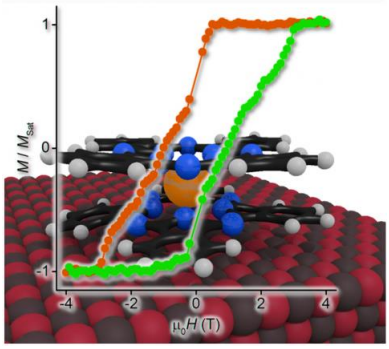
How does food look like on the nanoscale?

M. Nielsen, M. B. Munk, A. Diaz, E. B. L. Pedersen, M. Holler, S. Bruns, J. Risbo, K. Mortensen, R. Feidenhans'l. Food Struct. 7, 21-28 (2016) DOI:10.1016/j.foostr.2016.01.001



The answer to this question could save food industry a lot of money and reduce food waste caused by faulty production. Researchers from the University of Copenhagen and the Paul Scherrer Institut have obtained a 3D image of food on the nanoscale using ptychographic X-ray computed tomography. This work paves the way towards a more detailed knowledge of the structure of complex food systems. Read more: **https://www.psi.ch/swissfel/highlights**

Magnesium Oxide Boosts the Hysteresis of Single-Molecule Magnets



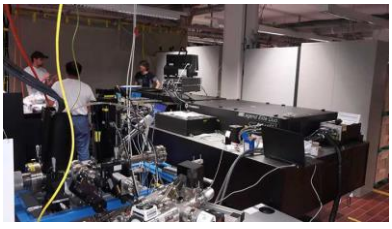
C. Wäckerlin, F. Donati, A. Singha, R. Baltic, S. Rusponi, K. Diller, F. Patthey, M. Pivetta, Y. Lan, S. Klyatskaya, M. Ruben, H. Brune, J. Dreiser, Advanced Materials 28, 5195 (2016)
DOI: 10.1002/adma.201506305

Researchers from PSI and EPFL have demonstrated that the magnetization hysteresis and remanence of $TbPc_2$ single-molecule magnets drastically depends on the substrate on which they are deposited. If a few atomic layers thick magnesium oxide film grown on a silver substrate is used, a record wide hysteresis and record large remanence can be obtained. Single-molecule magnets are attractive for molecular spintronics applications such as information processing or storage. Read more: https://www.psi.ch/sls/scientific-highlights-and-news

---

New Instruments & Methods

First light from the SwissFEL Experimental Laser



The experimental laser is an important component for performing time resolved optical pump - X-ray probe experiments at SwissFEL. Only a very high reliability and reproducibility guarantees successful experiments. Flexibility in wavelength is achieved by subsequent optical parametric amplification of the laser output. In a synergy between different research groups at PSI, the SwissFEL Experimental Laser 1 is successfully delivered and installed in a temporary Laser lab. Read more: https://www.psi.ch/swissfel/highlights