

Announcement

BIOVALLEY STRATEGY DAY - WEDNESDAY, 25 SEPTEMBER 2013

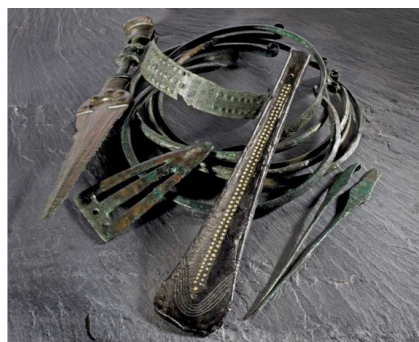
Congress Center Basel / Switzerland

12:00 - 13:30: Lunch Symposium: The Power of Synchrotron Radiation for Outstanding Analysis in the Field of Life Science

The Swiss Light Source at Paul Scherrer Institute (PSI) provides a comprehensive range of research- and development-services. The expertise and infrastructure of PSI are open to companies. With this event we would like to encourage greater use of our facilities by industrial researchers and present pathways to facilitate collaborations between industry and our institute. Download the agenda here:

http://www.lifesciencesweek.ch/program_strategyday.php

Research highlights

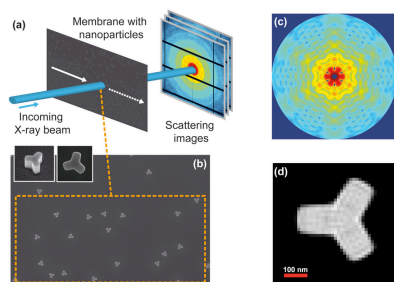


New insights into early bronze age damascene technique north of the alps

D. Berger et al, The Antiquaries Journal 93, 1 (2013), DOI: 10.1017/S0003581513000012

Damascening, defined in this context as the inlay of one metal into a different metal base, is a rare decorative technique in the Early Bronze Age, known only from seven bronze artefacts found north of the Alps. This paper reports on the first thorough scientific examination of one such find, the axe from Thun-Renzenbühl grave no. 1. This interdisciplinary project involving several institutions in

Germany and Switzerland investigated the axe by means of neutron radiographic imaging and X-ray microprobe methods, supported by microscopic examination. The result is an attempt to reconstruct the fabrication and decoration process and to reconsider the enigmatic question of the origins of the damascene technique north of the Alps. <http://www.psi.ch/num/2013#berger>.



Two-dimensional structure from random multiparticle X-ray scattering images using cross-correlations.

B. Pedrini et al, Nature Communications 4, 1647 (2013), DOI: 10.1038/ncomms2622

Prominent among the planned applications of X-ray free electron laser facilities, such as the future SwissFEL at the Paul Scherrer Institute, PSI, are structural studies of complex nano-particles, down to the scale of individual bio-molecules. A major challenge for such investigations is the

mathematical reconstruction of the particle form from the measured scattering data. The experiment consists of exposing the nano-particles to the X-ray laser pulses and of registering the resulting scattered rays. To guarantee sufficient statistical accuracy, many repeated exposures are required – each one on a different collection of identical, but randomly-oriented particles. Researchers at PSI have now demonstrated an optimized mathematical procedure for treating such data.

<http://www.psi.ch/media/structural-studies-of-nano-particles>.