

Research highlights

Put in perspective



M. Shalaby et al. *Nature Communications* 6, 8439 (2015),

DOI: [10.1038/ncomms9439](https://doi.org/10.1038/ncomms9439)

SwissFEL - Visualization of THz light

Researchers from the Paul Scherrer Institute PSI have succeeded in using commercially available camera technology to visualise terahertz light. In doing so, they

are enabling a low-cost alternative to the procedure available to date, whilst simultaneously increasing the comparative image resolution by a factor of 25. The special properties of terahertz light make it potentially advantageous for many applications, from safety technology to medical diagnostics. It is also an important tool for research. Read more: <https://www.psi.ch/media/put-in-perspective>

Exceptional preservation of tiny embryos documents seed dormancy in early angiosperms



Else Marie Friis, Peter R. Crane, Kaj Raunsgaard Pedersen, Marco Stampanoni & Federica Marone, *Nature* 1-4 (2015),

DOI: [10.1038/nature16441](https://doi.org/10.1038/nature16441)

The authors report the discovery of embryos and their associated nutrient storage tissues in exceptionally well-preserved angiosperm seeds from the Early Cretaceous. Synchrotron radiation X-ray tomographic microscopy of the fossil embryos from many taxa reveals that all were tiny at the time of dispersal. These results support hypotheses based on extant plants that tiny embryos and seed dormancy are basic for angiosperms as a whole.

Read more: <https://www.psi.ch/sls/scientific-highlights>

PEARL beam line at SLS: excited states at interfaces of a metal-supported ultra thin oxide film

T. Jaouen et al, *Physical Review B* 91, 161410(R) (2015), DOI: [10.1103/PhysRevB.91.161410](https://doi.org/10.1103/PhysRevB.91.161410)

Layer-resolved measurements of the unoccupied electronic structure of ultrathin MgO films grown on Ag(001) have been performed at the Photoemission and Atomic Resolution Laboratory (PEARL) beam line situated at bending magnet X03DA of the Swiss Light Source. The metal-induced gap states at the metal/oxide interface, the oxide band gap, and a surface core exciton involving an image-potential state of the vacuum are revealed through resonant Auger spectroscopy of the Mg K L_{23} L_{23} Auger transition. Our results demonstrate how to obtain new insights on empty states at interfaces of metal-supported ultrathin oxide films.