

Press Release

— for immediate release —

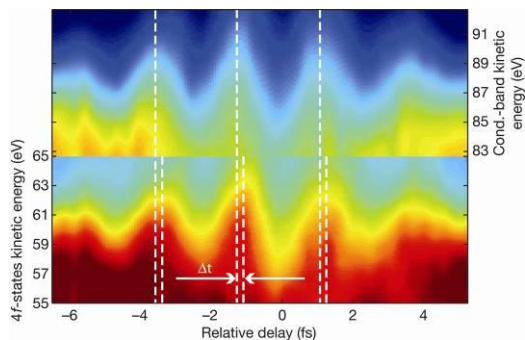
Femtosecond Phase Stabilization Technology Enables the Capturing Attosecond Electron Transport in Real Time

Menlo Systems is proud to announce its latest contribution to advancing attosecond technology. An international team of researchers at the Max Planck Institute of Quantum Optics together with the developers of the femtosecond phase stabilization units at Menlo Systems achieved the first essential step towards ultimate-speed electronics, limited only by the time required for an electron to travel between neighboring atoms.

In the proof of principle experiment 300-attosecond extreme ultraviolet light along with an infrared pulse comprising a few-well controlled oscillation cycles of its electric field fell upon the surface of a tungsten crystal. The ultraviolet photons excited both loosely-bound electrons and electrons bound tightly to the cores of the atoms forming the crystal lattice. With the rapidly oscillating, phase stabilized infrared pulses the some 110 attosecond difference in the arrival time of two types of electrons on the crystal surface could be resolved.

The experiment constituted the first attosecond measurement in condensed matter and opened the door to coherent control in solids on the atomic scale. The accomplishments were reported in *Nature* and highlighted on its cover.

The generation of the attosecond ultraviolet pulses freeing the electrons, and the detection of the released electrons on the surface with the few-cycle laser pulse were enabled by the patented phase-stabilization technology of Menlo Systems. The XPS800 unit for the oscillator and the APS800 unit for the amplifier are capable of stabilizing the phase of ultrashort pulse, high power lasers to values of about 100 mrad over several hours.



Contact

For more information contact the sales team at Menlo Systems GmbH, Am Klopferspitz 19, D-82152 Martinsried (Munich), Germany

Tel: +49 89 189 166 0, Fax: +49 89 189 166 111

E-mail: sales@menlosystems.com

Web site: <http://www.menlosystems.com>

About Menlo Systems

Founded in 2001 as a spin-off from the renowned Max-Planck Institute of Quantum Optics, Menlo Systems is a leading developer and global supplier of instrumentation for high precision metrology. Besides the Nobel-Prize-winning optical frequency comb technology, the Munich-based company supplies cutting-edge ultrafast fiber and Ti:sapphire laser solutions to scientific and industrial customers, femtosecond phase stabilization units and a broad variety of high-sensitivity fast photo detectors.