

Fastest Thickness Measurements with Terahertz Pulses

TeraFlash smart: Ultrafast Time-Domain Terahertz Platform

TOPTICA's new time-domain terahertz system TeraFlash smart sets new standards in terms of measurement speed: The system records up to 1600 pulse tracks per second, enabling real-time layer thickness measurements even on rapidly moving samples.

In contrast to conventional terahertz time-domain spectrometers, the TeraFlash smart does not use any mechanical delay unit, but includes two synchronized femtosecond lasers with an electronic delay ("electrically controlled optical sampling", ECOPS).

Within a measurement time of only 625 μ s, the TeraFlash smart achieves a spectral bandwidth of 3 THz. The dynamic range of the pulse trace is greater than 50 dB. Within one second of averaging, this value increases to > 80 dB and the bandwidth exceeds 4 THz. Users can flexibly adjust the terahertz path length from 10 cm to 180 cm.

Due to its high measurement speed, the **TeraFlash smart** lends itself to non-destructive testing of rapidly moving samples, e.g. in settings that involve conveyor belts or extrusion lines. The fiber-coupled transmitter and receiver antennas can be flexibly positioned and enable measurements in transmission or reflection.

Reflection measurements are particularly suitable to determine layer thicknesses, for example to investigate the wall thickness of plastic pipes, or the structure of polymer coatings or single- and multi-layered paint. The 10 m long fiber cables allow a spatial separation of the control unit from the measurement head, which can even be mounted on a robot arm.

Do you know all about quantum technology? Play the quiz and win Schrodinger's cat (maybe)... Take the **TOPTICA Quantum Quiz** during LASER World of Photonics at our booth B2.103 to find out how much you know about the field of quantum physics!

Don't miss our booth party: the **Quantum Carnival**: Join us for drinks, food, music, and great company! Tuesday, June 25th, 6-9 pm booth B2.103

Visit us at LASER World of PHOTONICS in hall B2.103!



TeraFlash smart – high-speed system for time-domain terahertz measurements: fast measurements of complete terahertz waveforms: 1600 pulse traces / sec

TOPTICA Photonics AG

Lochhamer Schlag 19

82166 Graefelfing

Germany

www.toptica.com

<http://www.toptica.com/company-profile/news/>

International Contact

Jan Brubacher

Phone + 49 89 85837-123

Fax + 49 89 85837-200

jan.brubacher@toptica.com

TOPTICA Photonics AG develops, manufactures, services and distributes technology-leading diode and fiber lasers and laser systems for scientific and industrial applications. Sales and service are offered worldwide through TOPTICA Germany and its subsidiaries TOPTICA USA and TOPTICA Japan, as well as through 11 distributors. A key point of the company philosophy is the close cooperation between development and research to meet our customers' demanding requirements for sophisticated customized system solutions and their subsequent commercialization.