TeraFlash – a versatile time-domain terahertz spectroscopy platform

The TeraFlash combines TOPTICA's FemtoFiber smart laser technology with state-of-the-art InGaAs antennas.

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Product news

TeraFlash

Time-domain terahertz spectroscopy platform

TOPTICA introduces the new TeraFlash system, a table-top platform for time-domain terahertz spectroscopy. The all-fiber design is based on mature 1.5 µm telecom technology, combining TOPTICA's established femtosecond fiber lasers and state-of-the-art InGaAs antennas. Using a highly precise delay stage, the TeraFlash achieves a peak dynamic range of more than 70 dB.

Users can choose between a "precise scan" mode and a "fast scan" mode. In "precise scan" mode a bandwidth of 4 THz and a resolution better than 10 GHz are attained. Alternatively, in "fast scan" mode, a pulse trace is acquired in only 50 ms. The fiber-coupled antenna modules can be conveniently arranged, depending on the needs of the experiment.
Integrated in the system is TOPTICA's FemtoFErb 1560, the most compact ultrafast laser on the market. The SAM mode-locked fiber oscillator and the usage of

polarization-maintaining fibers ensure a high robustness and alignment-free, “hands-off” operation.

The TeraFlash system is a perfect solution for applications such as high-bandwidth spectroscopy (e.g. of explosives or liquid crystals) and industrial process control.

Key Features

- Versatile time-domain terahertz platform
- Fiber-coupled InGaAs photoconductive switches
- High bandwidth > 4 THz, peak dynamic range > 70 dB
- Selectable resolution: 4 .. 40 GHz
- Built-in Er:fiber laser with SAM mode-locking technology (100 mW / 100 fs / 100 MHz)

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