New Developments in Diode- and Fiber Lasers

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KEY WORDS: lasers for microscopy, diode lasers, femtosecond fiber lasers, multi-laser engines, fluorescence microscopy, non-linear microscopy.

This talk will focus on diode lasers, multi-laser engines and ultrafast fiber lasers – compact and robust solutions for reliable hands-off operation as light-sources for microscopy. We will present latest innovations and show how recent microscopy techniques can benefit of these developments.

Ultrafast fiber lasers

Nonlinear microscopy techniques require reliable femtosecond lasers. Here, ultrafast fiber lasers are gaining more and more importance as they are compact and cost-effective alternatives to large Ti:Sapphire lasers. We will present the new FemtoFiber dichro, a multi-wavelength platform that provides fixed wavelengths as opposed to tunable laser sources. The new fiber laser system will provide femtosecond pulses at 780 nm and 1030 nm with temporal and spatial overlap for multi-photon applications.

Diode lasers and multi-laser engines

While gas lasers played an important role in laser based microscopy for more than two decades, they are now being replaced by more compact and cost-effective laser types, including diode lasers. We will present TOPTICA’s colorful palette of diode lasers and their special modalities like SKILL and FINE, designed to improve image quality.

Multi-laser engines provide several wavelengths to excite different dyes in a sample. The iChrome MLE is a flexible and easy-to-use solution for multi-color applications. The inherent challenge in multi-laser systems, the reliable laser-alignment, is solved by COOLAC, TOPTICA’s proprietary beam alignment technology which ensures highest power without the need to ever manually align optics.