



News Release

For immediate release
22 July 2009

Picosecond Pulsed Diode Laser Head at 531 nm

PicoQuant GmbH announces the release of the long-awaited 531 nm ("green") picosecond pulsed diode laser head.

The new green diode laser ("LDH-P-FA-530") is based on a master-oscillator fibre-amplifier (MOFA) concept with frequency conversion. A fibre pigtailed laser diode with spectral narrow bandwidth emission at 1062 nm is used as master oscillator ("seed laser"). It is pulsed at a variable repetition rate from 10 kHz to 40 MHz using the proven gain-switching technique from PicoQuant. The pulsed output from the seed laser is directly connected to a Ytterbium-doped fibre amplifier (YDFA), which boosts the output from the seed laser by more than 10dB. This output is then directly connected to a fibre-coupled SHG Frequency Doubling Waveguide, which converts the infrared laser emission to green emission (531 \pm 3 nm). The converted light is then coupled into a polarization maintaining single-mode output fibre which also strips off the remaining infrared light. The final average output of the LDH-P-FA-530 after the fibre reaches 1 mW at 40 MHz repetition rate at pulse widths <100 ps (FWHM). The spliced all-fibre setup makes a topology with a several couplings and interfaces robust and completely maintenance-free.

Due to the fibre amplifier concept, the laser is very compact with dimensions of only 195 x 112 x 24 mm. It can be driven by the established PDL 800-B, PDL 800-D or PDL 828 "Sepia II" laser drivers from PicoQuant.

The LDH-P-FA-530 is a very useful excitation source for e.g. fluorescence measurements in the 'Life-Sciences', where many popular fluorophores absorb in the green spectral range. Typically Argon-Ion lasers or other frequency converted cw lasers are used as an excitation source. However, these cw lasers are not suited for time-resolved measurements, which became much more popular in the recent years. With the new LDH-P-FA-530 it is now possible to also do fluorescence lifetime measurements in the green spectral range. Due to the gain-switching principle, the laser can be triggered externally and thus synchronized with other equipment in the experimental setup. This is not possible with other green pulsed lasers, which are mostly based on mode-locking principles. The compact and maintenance free design of the LDH-P-FA-530 also permits customers without laser experience to use this laser on a daily basis.

Attachment

picture as jpg.file

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About PicoQuant GmbH

PicoQuant GmbH is a research and development company, founded in 1996 and based in the Technology Park Berlin-Adlershof, Germany. Furthermore PicoQuant Photonics North America Inc. (PQPI) was established in April 2008. The company is leading in the field of Single Photon Counting Applications. The product line includes pulsed light sources, photon counting instrumentation, fluorescence lifetime spectrometer and time-resolved confocal microscopes. It employs around 40 people.

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