Experts in Femtosecond Laser Technology
for Biomedical Applications

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JenLab GmbH founded in 1999 in Jena (Germany) employs now app. 10 employees, mainly operating in R&D. JenLab is member of the Clusters BioRegio Jena e.V. and OptoNet e.V.

The product range of JenLab includes a wide field of scientific equipment and supplementary products for optical Nanotechnologies based on femtosecond lasers, particularly for applications in biotechnology, cell biology and medicine. Further accessories for high-resolution microscopy are provided (cell chambers, fluorescent dyes, histological preparations).

DermaInspect® is a novel *in vivo* multiphoton laser scanning system for non-invasive optical biopsies of human skin with sub-cellular spatial resolution. It is based on multiphoton-excitation of the autofluorescence on biomolecular level by femtosecond lasers in the near infrared. The device is designed for the examination of human skin and can be used for early detection of melanoma as well as for the in vivo detection of pharmaceutical and cosmetic components in skin. By the use of fluorescence lifetime imaging (FLIM) various fluorophores can be differentiated.

The scanning microscope JenLab Scan is a system for specific fs-laser based investigation techniques in biological and medical basic research.

With TauMap® a system for spatial (nm-range) and temporal (ps-range) resolved fluorescence analysis and for the determination of fluorescence decay times in single living cells is available. TauMap® can be used particularly for detection of protein-protein-interactions based on two-photon Förster resonance energy transfer (FRET).

femt-O-cut® is the latest product of JenLab. It is suitable for nano-surgery, optical gene transfer and nano-processing with nJ and µJ laser pulses.

Potential application fields for JenLab-products can be found in micro- and nano-surgery, optical gene transfer, in refractive, tumor and neuronal surgery as well as in evolutional biology. Additional markets that can be developed with the know-how of JenLab are in the field of laser fabricating of nanostructures in polymers and semiconductors.