

Pantec Biosolutions AG

Laser sources and services for medical and industrial applications

Pantec Biosolutions AG manufactures high-power lasers and single-frequency laser sources (in the range from 0.5 – 5.5 μm) for medical and industrial applications. Pantec Biosolutions AG is furthermore an Engineering Design House, providing development services from the idea up to zero-series under ISO 13485 certification.



Pantec Biosolutions AG is an ISO 13485 certified company in Liechtenstein. We are active in research, development and manufacturing of lasers, optical components, electronics and complete systems focused in the medical line with scientific and industrial applications. We support ideas converting into advanced technologies.

Our laser systems

We support innovative research both with our expertise as well with our products as laser sources with related electronic control system, cooling solutions and optical accessories such as fiber coupling, focusing optics, scanners including the following types:

- Diode pumped solid state lasers: Er:YAG (2940 nm), Tm:YAG (2020 nm), Er:YLF (2810 nm, q-switched) laser systems (average laser power up to 100 W, pulse energy up to 9 J)
- Direct diode lasers and OPO designs: High-brightness, single frequency, compact direct diode lasers in the 1 μm range and in the visible range (e. g. 532 or 577 nm)

- Ultrafast laser systems: Compact and low-cost Yb-based ultrafast lasers and amplifier systems

Services for development

To facilitate research and development, we use COMSOL multiphysics in individual areas of e. g. laser design or energy and heat transfer throughout the entire development process. In prototyping and device development we accompany from the idea up to the final state of the product for series production. Our portfolio includes the following components and services:

- Lasers and optics: Solid state lasers and laser diode development, ray tracing, multiphysics simulation
- System development: Circuit board & hardware design, embedded software & FPGA, UI & usability design
- Advanced diagnosis & AI image processing: OCT tissue depth detection, 2D image processing in real time, 3D detection of objects for precise laser positioning
- Device development & prototyping: Medical & industrial devices, con-

tract development, requirements & specifications, co-creation

- Technical documentation: device history file, risk management file, usability engineering file



Applications and research interests

Minimally invasive surgery, bone cutting, dentistry, spine, skin and dermatology, ophthalmology, lithotripsy, material cutting and drilling, spectroscopy and analysis, marking and engraving; contract development and prototyping;

COMSOL Certified Consultant

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