VALO Innovations Products

**Products**

- VALO Innovations - Aalto
  - < 40 fs
  - > 200 mW
  - 30 MHz

- VALO Innovations - Tidal
  - < 40 fs
  - > 3 W
  - 30 MHz

- High Energy Laser System*
  - < 50 fs
  - > 1 µJ
  - 30 MHz / 1 MHz

- Customer specific solutions

* under development
Benefits of sub 50 fs laser pulses

Example: Multiphoton microscopy and Optogenetics

Shorter pulses lead to

- > 5x higher efficiency (2 Photon)*
- > 25x higher efficiency (3 Photon)*
- > 5x reduced thermal heating**
- > 2x reduced photo induced damage**
- Higher contrast, resolution and scan depth

* 40 fs vs. 200 fs
** 40 fs vs. 200 fs (same TPE)
Applications (examples)

**Life science**
- Multiphoton microscopy
- Optogenetics
- Multiphoton spectroscopy
- Time resolved spectroscopy
- ...

**Sensing and security**
- THz generation (seed source)
- Mid IR generation (seed source)
- Semiconductor inspection
- ...

**Material processing**
- Micro- and nanomaterial processing
- Sensor manufacturing
- Two photon polymerization
- ...

**Fundamental research**
- Seeding parametrical oscillators / amplifiers
- ...

Benefit from sub 50 fs laser pulses!
What we can do / What you can do

What we can do

• Ultrafast fiber laser
  • Sub 50 fs
  • 200 mW - 30 W

• Are you looking for „non-standard“ wavelength?
  • We can offer a solution

• You have a specific demand?
  • Ask for a customized solution

• Open for collaborations

What you can do

• Do you have application ideas

• Help us to improve the lasers
  • What are you missing?

• Test our lasers for your applications

• Help us to connect with people

• Tell people that we offer sub 50 fs lasers with various power levels

• Stay safe!
Ultrafast fiber lasers with pulse durations below 50 fs

Thank you very much EPIC!

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