

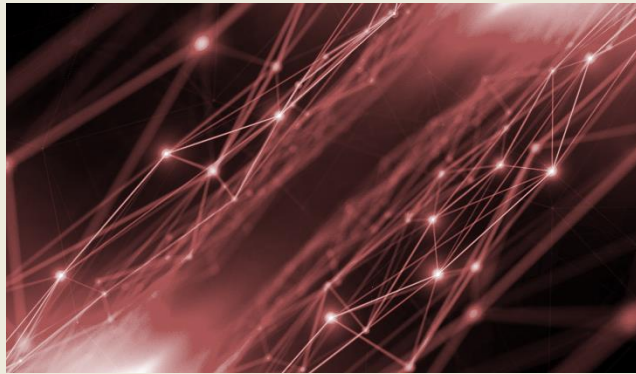
SUPERCONTINUUM WHITE LIGHT LASERS FOR ENDOSCOPY

**EPIC Online Technology Meeting on
Endoscopy**

Kim Per Hansen, VP Strategic Marketing, June 17, 2020

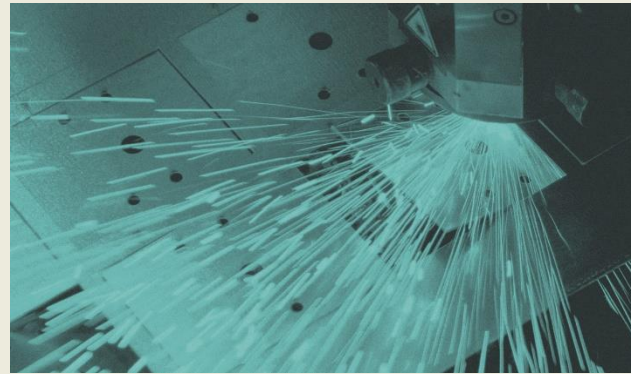
NKT Photonics at a glance

Overview



- Supplier of fiber-based lasers and sensing systems
- Headquarters in Denmark
- ~400 employees
- 75 MEUR revenue in 2019

Our Main Markets



- Medical & Life Science
- Industrial
- Aerospace & Defence

Our Products



- White light lasers
- Single-frequency lasers
- Ultrafast lasers
- Fiber sensing systems
- Photonic crystal fibers

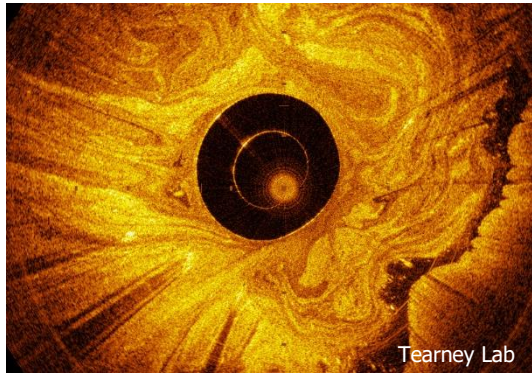
SuperK supercontinuum white light lasers



- Pulsed single-mode lasers with the spectral coverage of a lamp (typically 390-2400 nm)
- Brightness many orders of magnitude above lamps and LEDs
- Fiber delivered output
- Robust all-fiber systems
- Long lifetime of 10k+ hours
- Cost is in the order of 5-50 kEUR

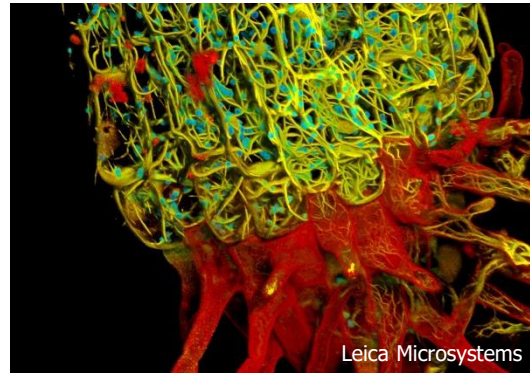
SuperK lasers enable many imaging techniques

OCT



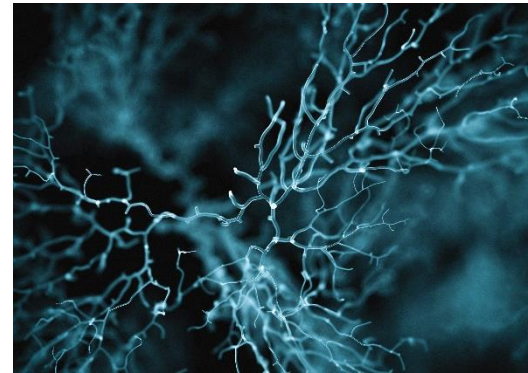
- Established technology in cardiovascular/gastro endoscopy
- More power and bandwidth enable better tissue penetration and axial resolution

Confocal imaging



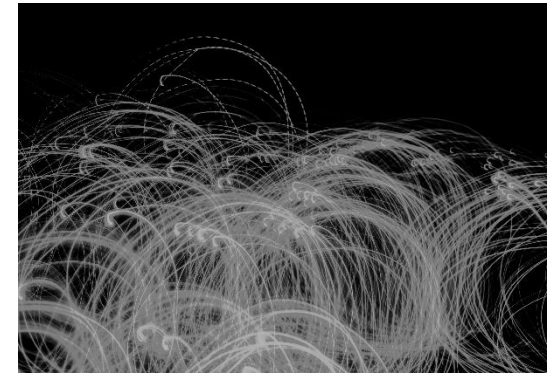
- Laser scanning confocal in an endoscopic probe
- With or without fluorescence

NIR spectroscopy



- Spectroscopic imaging
- Hyperspectral imaging
- NIR wavelengths up to 2.4 μ m enable deep tissue penetration

Diffuse spectroscopy



- Physical separation between illumination and detection yielding structural information about the tissue

Why use SuperK lasers for endoscopy?

Flexibility



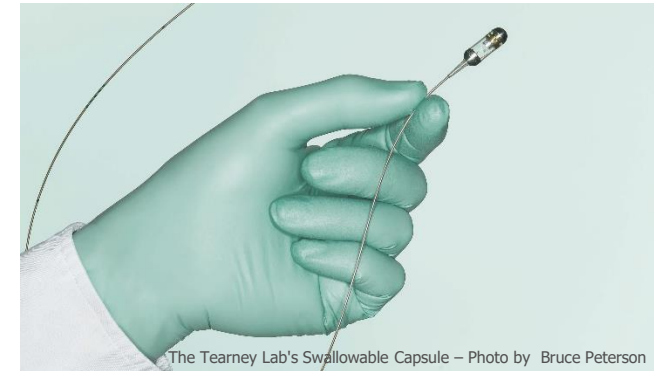
- Full visible + NIR spectrum with possibility for tailorable colour temperature
- Very high brightness and low heat
- Advanced multi modal imaging

Lifetime and TCO



- Maintenance-free lifetime of 10k+ hours
- No service required
- Low Total Cost of Ownership

Smaller probes



- Small probes and endoscopes
- Very thin delivery fiber