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EPIC Online Technology Meeting on Medical Devices for Surgical Procedures



Lasers and optics for personalized medicine and better life.

Zoe Ylöniemi 14th June 2021



Trends in biomedical imaging

- Recent boost in genomics and sequencing, flow cytometry, droplet sorting, cell imaging and microscopy
- Clinical translation FGS: 5-ALA for more comprehensive GBM resection and TURBT in bladder cancer
- New multi-function drug delivery: local targeting, imaging and treatment
- → Need for flexible theranostic medical devices

Application requirements for theranostic laser systems

- Wide selection of wavelengths needed to support existing and future dyes
- □ Range of imaging agents keeps increasing
 → Need for configurable, multi-use platforms
- Variable light delivery options needed depending on application site
- Complete solution offering from in-vitro to clinical use to enable smooth clinical translation
- Usability designed for medical professionals
- Connectivity to enable remote diagnostics, data collection, etc.



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\$27M Investment into laser design and manufacturing

> Space expansion 11.000 sq.ft increase to

> > Increase equipmen new equipment from e Increasing product demand for applications like illumination,

spectroscopy, remote sensing, LIDAF PDT, digital printing

Hire new people +20 new open positions

4

products assemb

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- □ Medical laser company in Tampere, Finland
- Exclusive supplier to 10+ pharmas, other Fortune 500 companies & leading cancer centers
- □ In-house diode laser fab & true vertical integration
- □ Supporting customers from **early discovery** & innovation to mass production & end-of-life
- Modulight medical laser product portfolio ranges from compact light engines for endoscopic imaging to cloud connected medical laser systems for treating glioblastoma



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Case example: ML7710 for in vivo fluorescence imaging

- □ Modulight ML7710 laser platform supports 8 wavelengths by default
- ML7710 configuration for fluorescence imaging contains RGB source and selectable excitation wavelength
- **G** Focus in achieving better beam profile and minimized speckle
- Platform design enables flexible changing of laser wavelengths depending on application/fluorescent dye properties
- Internet connectivity enables remote software updates and diagnostics and management of devices in the field
- Easy extension to a theranostic device platform



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What can Modulight do for you?

- Modulight designs and manufactures laser systems for medical professionals from *in vitro R&D* to commercial use
- Modulight laser platforms are designed to support multiple excitation wavelengths, different light delivery optics and automated data collection and analysis in ML Cloud
- Our customers range from pharmaceutical companies to medical device manufacturers and individual MDs.

What can you do for Modulight?

- We are always looking for OEM manufacturer partners to help us take our laser systems to the next level
 - Optical fibers, miniaturized spectrometers, FBG technology etc.
- Help us to identify new application areas for our laser systems and introduce us to new diagnostic/therapeutic methodologies where our lasers could be utilized

Thank you! modulight